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The ties that blend: Social capital and family firm innovation

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The research project empirically assesses the influence of an under-researched aspect of social capital on the family firm's entrepreneurial behaviors. Specifically, blending social capital, which consists of bonding social capital and bridging social capital that develops between family firms and external family stakeholders, is considered in examining the family firm's engagement in innovation efforts. Additionally, familial tie strength and outside business ownership of external family stakeholders are argued to moderate the proposed relationship between blending social capital and family firm innovation. The surveying methods for assessing the hypothesized relationships included conducting a two-wave study with adapted, modified, and validated scales. Also, some variables were collected using the Mississippi Secretary of State, the U.S. Copyright Office, the U.S. Patent and Trademark Office, and the U.S. Census Bureau American Community Survey databases. The theoretical model is analyzed using hierarchical regression and moderated regression using IBM SPSS 28 Process Macro (Hayes, 2021), structural equation modeling with AMOS, and scale development techniques to ensure the validity and reliability of the measurement instruments. The goal is to identify potential antecedents for enhancing the innovation capabilities of family firms.

Keywords: Family firms, social capital, blending social capital, innovation, tie strength, structural equation modeling, moderated regression.

DEDICATION

This dissertation is dedicated to my mom, Teresa “Terri” Odom (8/11/1956-9/26/2022), and my son, Anderson Ivey Odom. Mom, thank you for instilling in me the importance of education and an admirable work ethic! Anderson, I hope my work and dedication throughout the doctoral program motivate you to set goals in life, whatever they may be, and see them through with tenacity and integrity. Dada loves you, buddy!

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CHAPTER I

INTRODUCTION

A key component of firm survival and longevity stems from the firm's investment and participation in innovation (Drucker, 1954; Schumpeter, 1934). The continued renewal of processes and products is essential for a firm to remain competitive and achieve long-term success. For the firm's innovative efforts to be realized, the firm must be willing and able to innovate (Bozec & Di Vito, 2019; Chrisman, Chua, De Massis, Frattini, & Wright, 2015). The firm must have the necessary resources to undertake an innovative endeavor while also maintaining a desire to propel the firm in new directions. One type of firm that falls into this paradigm of differing abilities and willingness for innovation is family-owned firms.

One standard definition of a family business is to consider all the firms with family involvement included as a family business; however, there should be other means for identifying a family business. This conceptualization of a family business may be too general because the component of family involvement alone does not necessarily mean the business will display different actions or behaviors than those of other firms without family involvement (Chua, Chrisman, & Sharma, 1999). To truly feature the uniqueness of family businesses, other conditions must be considered in the definition. With this in mind, the definition of a family business/family firm used in this study is, "a business governed and/or managed with the intention to shape and pursue the vision of the business held by a dominant coalition controlled by members of the same family or a small number of families in a manner that is potentially

sustainable across generations of the family or families," (Chua, Chrisman, & Sharma, 1999, p. 25). Due to the distinct characteristics stemming from the controlling ownership of families, family firms are categorized as displaying heterogeneous behaviors (Chua, Chrisman, Steier, & Rau, 2012). A commonly explored idiosyncratic behavior in family firms is their propensity for innovation (De Massis, Frattini, Pizzurno, & Cassia, 2015; Goel & Jones, 2016; Röd, 2016).

Innovation is a crucial activity related to the long-term renewal of the family firm. However, family business research suggests that family firms may be unbalanced in pursuing opportunities (Goel & Jones, 2016). Thus, family firms are posited as less inclined to innovate due to the desire to preserve the family's controlling ownership of the firm (Chrisman et al., 2015). Due to their preference for preserving family control, family firms tend to engage in more incremental efforts than radical efforts when choosing to innovate (Goel & Jones, 2016). Family firms' reluctance to engage in radical innovation results from the increased risk typically associated with undergoing opportunity exploration efforts. Such increased risk arises from the additional knowledge, skills, and resources required to invest in new products or enter new markets to remain competitive (Bierly & Daly, 2007). Therefore, taking on higher-risk endeavors goes against family firms' risk aversion (Gomez-Mejia et al., 2007). Still, family firms may be at an advantage when innovating due to distinct resources, such as social capital (Carnes & Ireland, 2013; Sirmon & Hitt, 2003). Through introducing and studying a novel conceptualization of family firm social capital, i.e., blending social capital, this study aims to provide insights into the family firm's entrepreneurial behaviors. Blending social capital refers to the existence of both bonding social capital and bridging social capital in social ties with external family stakeholders of the firm. Bonding social capital includes the dense social ties among the collective, i.e., within a family or an organization, while bridging social capital consists of the direct and indirect

external links of an actor within the collective with other actors outside the collective (Adler & Kwon, 2002; Sharma, 2008). The term external family stakeholder represents a family member that is neither employed by the family firm, involved in the family firm's daily activities, nor considered a majority owner of the family firm (i.e., greater than 5%). Also stemming from the heterogeneous nature of family firms, the social capital of family firms is identified as a distinct resource to family firms (Sirmon & Hitt, 2003). Hence, the study's overarching theoretical lens is the social capital perspective.

Social capital is a commonly used perspective to describe the interactions, trust, norms, shared values, and the strength of the social ties found among individuals (Coleman, 1988; Tsai & Ghoshal, 1998). With roots in sociological and community-based studies, social capital was extended into organizational studies to explain the characteristics of internal and external social relationships (Leana & Van Buren, 1999; Nahapiet & Ghoshal, 1998). Thus, social capital is a leading concept in explaining the behaviors of organizations (Leana & Van Buren, 1999). Social capital is defined as, "the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit" (Nahapiet & Ghoshal, 1998, p. 243). A few common perspectives in the literature are that the presence of social capital aids organizations in acquiring knowledge, product innovation, venture creation, and organizational performance (Adler & Kwon, 2002; Payne, Moore, Griffis, & Autry, 2011). Therefore, social capital is considered a valuable resource for organizations.

Social capital research in family firms builds on one of the defining characteristics of family firms, family involvement (Gersick et al., 1997). The establishment of social capital in the family prior to the formation of the business leads researchers to categorize social capital as a more significant intangible resource for family firms than nonfamily firms (Arregle, Hitt,

Sirmon, & Very, 2007; Sirmon & Hitt, 2003). Based on the notion that social capital can be an essential resource for firms, with the family's inclusion of established social ties, social capital is considered a potential source for a distinct competitive advantage for family firms (Sirmon & Hitt, 2003). Additionally, family business scholars suggest that the social capital of the family firm leads to a competitive advantage as social capital cannot be easily transferred (Sorenson & Bierman, 2009). Viewing social capital as a crucial resource for family firms has influenced researchers to imply that social capital is related to the development of beneficial organizational practices (Rothausen, 2009), the creation of additional resources (Koropp, Grichnik, & Kellermanns, 2012), entrepreneurial decision making (Discua Cruz, Howorth, & Hamilton, 2013), and superior family firm performance (Hoelscher, 2014). Essentially, social capital found in family firms is used in the literature to explain the influence of a potentially unique resource on family firms' behaviors and outcomes.

The family firm's social capital is a firm-specific resource that may lead to an advantageous competitive position for family firms (Arregle et al., 2007; Sirmon & Hitt, 2003). The advantage results from the established kinship ties with the family in the business, which provides a more robust and richer stock of social capital for family firms (Hoffman, Hoelscher, & Sorenson, 2006). Nevertheless, tension exists in the literature regarding how social capital influences family firm entrepreneurial behavior. The enriched social capital of family firms is proposed to influence family firms' innovative behaviors (Patel & Fiet, 2011). However, research indicates that strong internal social ties with family may enhance incremental innovative efforts, such as opportunity exploitation, while hindering other innovative behaviors, such as opportunity exploration (Andersén, 2015). One reason for substantial bonding social capital leading to dichotomous influences on innovation stems from the types of information gained and

transferred through these social ties. The knowledge gained from inside the firm facilitates the incremental innovative efforts found in opportunity exploitation; however, the redundancy of information limits opportunity exploration efforts. Thus, the close social ties with family members in the firm may limit the search for new resources or processes the family firm may implement for introducing radically innovative efforts. These differing outcomes that social capital brings about in family firms' innovation efforts may be a product of the conventional conceptualization of the family firm's social capital.

Typically, research conceptualizes family firm social capital as the bonding social capital with family stakeholders and the bridging social capital with nonfamily stakeholders (Chirico & Salvato, 2016). Nevertheless, research needs to adequately consider all the forms of family firm social capital by focusing more attention to the social ties that may emerge with family stakeholders external to the family venture. An example of this can be seen in the 2019 Entrepreneurship Theory and Practice special issue on "Social Structures, Social Relationships, and Family Firms," in which all the studies researching external social relationships fail to consider the family firm's social relationships with external family members (Zellweger, Chrisman, Chua, & Steier, 2019). While the archetypical forms of social capital are influential in shaping the family firm's behaviors (Uhlaner, Matser, Berent-Braun, & Flören, 2015), much is left unanswered about the influence of social capital on the family firm's entrepreneurial behaviors by not exploring the social ties with external family stakeholders. Research indicates that family influence may even reach outside the boundaries of the family firm (Gersick et al., 1997). Including external family stakeholders in the research models of family firm social capital will provide a more detailed "picture" of social capital in family firms, specifically how the bonding and bridging social capital with external stakeholders influence innovation. Therefore,

this study intends to address the gap by examining the influence of blending social capital with external family stakeholders on the family firm's innovation.

Thus, the research project's major contribution is to explore why some family firms may be more able to leverage their social capital in exploiting and exploring opportunities for firm renewal. An additional contribution the research project aims to highlight is the importance of exploring social capital in family firms from a holistic approach by including the external social capital with family stakeholders. Similarly, this research project intends to introduce a new perspective to the social capital of family firms by not categorizing all social capital with family members as family firm bonding social capital. The new perspective is introduced through the notion of blending social capital, which is when bonding and bridging social capital coexist with relationships between the family firm and external family stakeholders. The concept of blending social capital also counters the viewpoint set forth by current research (e.g., Dieleman, 2019) that family firms can only increase their network breadth by including nonfamily members. By assessing less studied facets of family firm social capital to provide new insights into family firm entrepreneurial behaviors, family business scholars may expand on the concept of blending social capital with family stakeholders.

By exploring the dynamics of family firm social capital and its influence on family firms' innovative behaviors, this study intends to address the following research question: RQ1) How does blending social capital with family stakeholders relate to innovation in family firms? Figure 1.1 depicts the research model developed to gain insights into the study's research question.

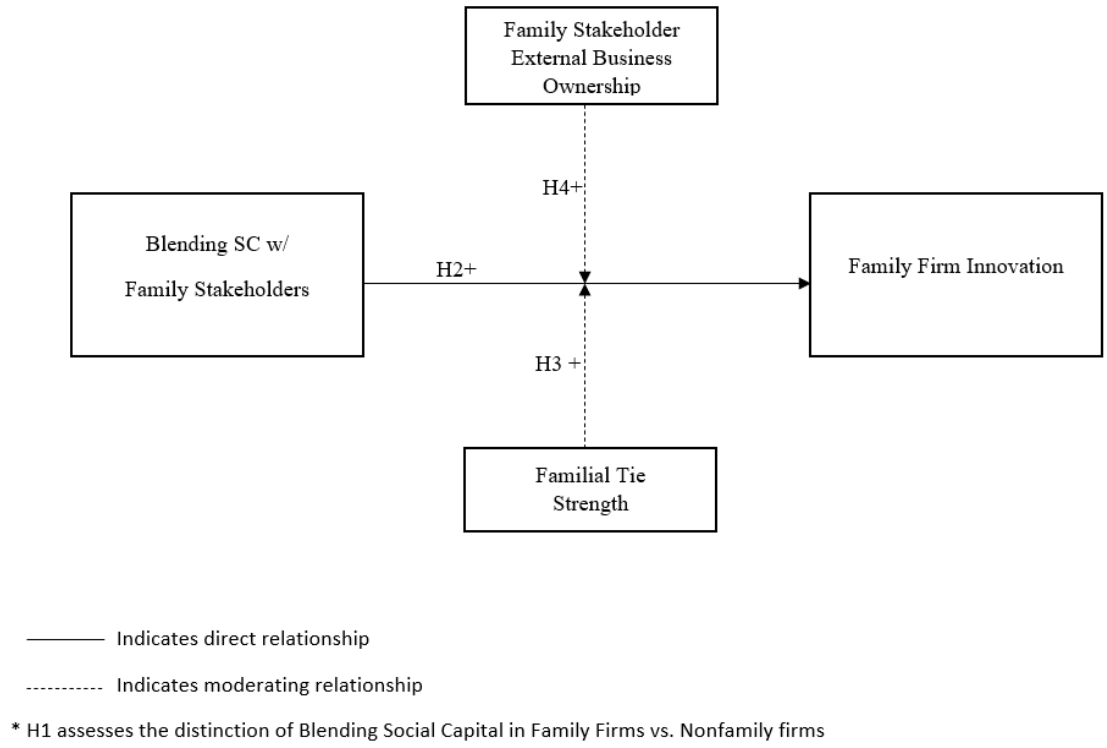

Figure 1.1 The Influence of Blending SC with Family Stakeholders on Family Firm Innovation

Therefore, establishing and maintaining social ties with external family stakeholders may positively impact the entrepreneurial behaviors of the family firm (i.e., H2). Additionally, due to the increased family involvement and the propensity to preserve noneconomic value, family firms will experience greater amounts of blending social capital and its corresponding benefits than nonfamily firms (i.e., H1). Familial tie strength is included as a moderating variable to provide more insight into the relationship between blending social capital and family firm innovation. Familial tie strength refers to the closeness of the familial tie regarding the family entrepreneur and the external family stakeholder. Stronger familial ties with external family stakeholders are argued to enhance the benefits of blending social capital on the innovative

efforts of the family firm (i.e., H3). The enhancing effect arises from the increased resource mobilization in the blending social capital. Likewise, external family stakeholders' ownership of an external business is expected to enhance the relationship between blending social capital and family firm innovation due to the knowledge gained through these social ties (i.e., H4). Thus, familial ties with greater strength and external family stakeholders that have ownership in an outside business are argued to positively influence the impact of blending social capital with family stakeholders and the family firm's innovative efforts.

This dissertation follows the traditional five-chapter format. The first chapter introduces the research agenda, including the intended contributions to family business research to be made by conducting this study. The second chapter provides an overview of the literature pertaining to family firm innovation and social capital. Additionally, chapter two includes theoretical development, which leads to the hypotheses and explains the study's research model (see Figure 1). Chapter three includes the research methods for data collection, scale items to measure the identified constructs of the study, and the various analytical methods performed for assessing the measurement instrument and data. Chapter 4 provides the results of the analyses conducted for the main models and alternative models for testing the hypothesized relationships. A discussion of the results, including contributions and implications for continued research on blending social capital, is included in Chapter 5. Chapter 5 also includes potential limitations, solutions for mitigating the limitations in future research, and a conclusion of the study.

CHAPTER II

THEORETICAL DEVELOPMENT

2.1 Innovation in Family Firms

A recurring question in the studies of family firms is: are family firms more innovative than nonfamily firms? The question's importance stems from the argument that innovative behavior is influential in the longevity of family firms (Röd, 2016; Schumpeter, 1934). Innovation is defined as, "the renewal of products and processes through the invention, development, and implementation of new ideas," (Duran, Kammerlander, Van Essen, & Zellweger, 2016, p. 1226; Garud, Tuertscher, & Ven De Ven, 2013, p. 776). Innovation is a crucial process for the strategic renewal of the family firm, such that value is added while costs are contained to obtain and sustain a competitive advantage. All effective innovative behaviors should enhance family firms' growth and longevity (Goel & Jones, 2016). For instance, incremental innovation contributes to the sustainability of family firms, as it aids in leveraging the benefits of existing competitive advantages (Carnes & Ireland, 2013). Thus, innovation leads to the refinement of known and successful strategies in family firms to ensure the firm's continuity (Goel & Jones, 2016). On the other hand, innovation also occurs from shifting the firm from existing knowledge and skills to new opportunities from newly acquired skills or market knowledge (Goel & Jones, 2016). The firm's survival, growth, and long-term renewal rely on effectively exploring entrepreneurial opportunities (Goel & Jones, 2016; Shane & Venkataraman, 2000). Thus, the importance of short-term gains and long-term innovation

provokes scholars to stress the need for both incremental and radical innovation to secure a viable competitive position for the firm (Webb, Ketchens, & Ireland, 2010).

Superior innovation is achieved through effective and efficient utilization of the firm's processes, resources, and product/service deployment in new or existing markets. The ability to remain competitive through continued renewal results in the family business experiencing viability while complementing the business's long-term goal orientation (Le Breton-Miller & Miller, 2006). For the family firm to remain competitive and viable, the family firm must have the ability and willingness to innovate (Chrisman et al., 2015). Research suggests that family firms are less willing to invest in innovative efforts than nonfamily firms, yet they are more efficient (or able) than nonfamily firms in the innovation process (Duran et al., 2016; Patel & Chrisman, 2014; Röd, 2016). For instance, family firms are less likely to invest in R&D efforts than nonfamily firms (Bozec & Di Vito, 2019); however, family firms invest to a greater extent in R&D efforts than their nonfamily counterparts when performance falls below aspiration levels (Chrisman & Patel, 2012; Sun, Lee, & Phan, 2019). Another argument for the existence of the ability-willingness paradox arises from family firms' hesitation and conservatism towards innovation, yet, family firms also make up a large portion of Forbes's 2014 Most Innovative Companies List (Rondi, De Massis, & Kotlar, 2019).

Assessing the innovation input versus the innovation output of family firms, in which family firms display lower investment in firm innovation than nonfamily firms (Duran et al., 2016), echoes the ability-willingness paradox of family firm innovation behavior. The preferences created by family involvement may impact the family firms' capability to engage in innovation (Chrisman, Chua, Pearson, & Barnett, 2012; Gomez-Mejia, Makri, & Kintana, 2010). One reason the innovative behaviors of family firms differ from nonfamily firms emanates from

the desire to preserve the firm's noneconomic value to the family, i.e., socioemotional wealth (SEW; Gomez-Mejia et al., 2007). Family firms are less inclined to invest in riskier innovative efforts to retain the noneconomic wealth accumulated in the family business. For instance, protecting the affective endowment of the family influences the R&D investment decisions of family firm managers such that family firm managers may exhibit cautious or risky R&D investment behavior at different thresholds of risk imposed on socioemotional wealth (Patel & Chrisman, 2014). The highly idiosyncratic nature of family firms may also explain why innovative behaviors vary among family firms (Chua, Chrisman, Steier, & Rau, 2012).

The increase in studying the heterogeneity of family firms provides additional insight into the contrasting behaviors found among family firms. Of particular interest is the differing innovative behaviors of family firms highlighted in the literature and how they may use their distinct characteristics to gain a competitive advantage in their entrepreneurial efforts (Eddleston, Kellermanns, & Collier, 2019; Rondi et al., 2019). Research indicates that family firms should be able to leverage their distinct resources to increase the firm's entrepreneurial behaviors (Arregle et al., 2007; Patel & Fiet, 2011; Sharma & Salvato, 2011; Sirmon & Hitt, 2003). Thus, the different combinations of resources the family firm has at its disposal will influence its entrepreneurial ability. More specifically, the family firm's resources will enhance or retard the ability to identify opportunities for the firm and how the family firm responds to the opportunities for enhancing competitive advantage. Therefore, the family firm's innovative behaviors may result from its dynamic capabilities (Zahra, 2018). In choosing to exploit opportunities for innovation, family entrepreneurs believe that the, "expected value of the entrepreneurial profit will be large enough to compensate for the opportunity cost of other alternatives, the lack of liquidity of the investment of time and money, and a premium for

bearing uncertainty," (Shane & Venkataraman, 2000, p. 217). For value-added entrepreneurial behaviors to occur in the family firm, it must either recombine existing resources to enhance its processes and efficiency or acquire new resources, skills, or knowledge for introducing new processes, products, and services to the external market.

Utilizing a resource-based lens has led to the argument from some researchers that family firms are better positioned for orchestrating their unique resources in a manner that supports innovation efforts (Carnes & Ireland, 2013; Sirmon, Hitt, Ireland, & Gilbert, 2011). Scholars argue that family firm characteristics lead to intangible resources that are rare, valuable, and difficult to imitate (i.e., inimitable) by nonfamily firms (Barney, 1991; Sirmon & Hitt, 2003). Relying on firm-specific resources assists in developing core competencies for adequately addressing the opportunities for the renewed growth of the firm. As indicated, social capital is one resource that aids in family firms achieving superior performance compared to their competitors (Sirmon & Hitt, 2003). The social capital perspective emanates from the resource-based view of the family firm and, thus, may aid in exploring why some family firms are more effective in their entrepreneurial endeavors than others. Before the idiosyncratic entrepreneurial behaviors of family firms can be assessed, the social capital perspective must be further discussed.

2.2 Social Capital

The concept of social capital originated in the sociology field from studies observing and describing the behaviors of neighborhoods building relationships based on trust, communication, and collaborative effort to act collectively to benefit the neighborhood (Jacobs, 1965). However, it was not until Bourdieu that the term "social capital" was introduced to describe, "the aggregate of actual or potential resources which are linked to…a durable network …institutionalized

relationship…or mutual acquaintance," (1986, p. 248). Within the social capital literature, social capital conceptually occurs at the individual and collective levels (Burt, 1992; Portes & Sensenbrenner, 1993). For instance, Burt (1992) describes social capital as the contacts individuals have from which they can receive benefits and opportunities.

On the other hand, Portes and Sensenbrenner (1993) view social capital as the actions derived from goal-seeking behavior from the members of a collective. This viewpoint arises from the notion that social capital does not exist in a single individual; instead, social capital emerges from the shared relationships of a collective (Bourdieu, 1983). Naphiet and Ghoshal (1998) introduced social capital in organizational studies to explain the actual and potential resources that result from the social unit. Research suggests that organizational social capital manifests through the intra-group dynamics and interactions of the dominant group of individuals in the firm (Arregle et al., 2007). Social capital enhances individuals' ability to share resources, such as information, to achieve ends more efficiently (Nahapiet & Ghoshal, 1998). Social capital additionally impacts the organization through appropriability, which occurs when the social capital from one social structure is transferred to pursue the goals of another unintended social structure (Coleman, 1988).

In describing social capital characteristics, researchers have introduced many concepts to describe the relationships present among members of the social group. Prevalent social capital characteristics include the strength of network ties (Granovetter, 1973), the location of social capital in relation to the organization (Adler & Kwon, 2002), and the structural, relational, and cognitive dimensions of social capital (Nahapiet & Ghoshal, 1998; Tsai & Ghoshal, 1998). The strength of the ties describes how close the individuals in the relationship are. While close relationships allow for a "stronger" relationship to form due to increased trust, more in-depth

communication, and shared understanding, Granovetter (1973) posits that "weaker" social ties have a higher impact on access to privileged knowledge. One determining factor of the strength of the network ties results from the relationship's location in relation to the organization.

Scholars typify social capital based on the location of the social tie when discussing the forms of social capital that may manifest for the organization. The two typical representations of social relationships are either 1) bonding versus bridging social capital or 2) internal versus external social capital (Adler & Kwon, 2002; Burt, 1992; Coleman, 1988). Bonding social capital represents dense networks that result in mutual trust, cohesiveness, and shared goals within the collective (Coleman, 1988; Sharma, 2008). Alternatively, bridging social capital is characterized as filling structural holes in the network by developing relationships with outside actors to gain benefits such as opportunity identification, information, and favorable negotiations (Burt, 1992; Sharma, 2008). In reviewing the social capital literature, Adler and Kwon (2002) categorize bonding social capital as internal social capital and bridging social capital as external social capital to classify where the resources for actors are derived. Thus, internal, or "bonding," social capital refers to social ties among individuals within the organization. In contrast, external, or "bridging," social capital comprises relationships with individuals, firms, or collectives outside the organization. For this research proposal, the traditional classification of bonding and bridging will distinguish the different forms of social capital.

Bonding social capital tends to be associated with stronger network ties due to the increased time, emotional bonding, and reciprocity likely to emerge from daily interactions among individuals within the collective, while bridging social capital results in weaker network ties (Granovetter, 1973). Additionally, Nahapiet and Ghoshal (1998) suggest that social capital has three dimensions: structural, cognitive, and relational. The structural dimension of social

capital consists of the interaction, patterns, and strength of ties among individuals in the group. Further, the structural dimension of social capital refers to the density of the social structure and the ability to transfer and share social structures with others in the collective (Pearson, Carr, & Shaw, 2008). The cognitive dimension of social capital includes shared interpretations, codes, and meanings among individuals in the social group. Trust, norms, reciprocity, obligations, open communication, and identity comprise social capital's relational dimension. Thus, researchers argue that the resources accessed from the actor's social ties may benefit the firm's success. In describing the nature of social capital in family firms, all three dimensions of social capital are considered in the study.

2.2.1 Benefits of Social Capital

Social capital research exemplifies the influence of social relationships as resources in ensuring the success of organizations. Typically, the resources extracted from social ties take an intangible form, such as information, reciprocity, status, commitment, and opportunities (Payne et al., 2011). However, the intangible benefits derived from social capital are still influential to the collective, i.e., the firm. One such benefit from the embedded resources found in social capital is the increased performance of individuals in the organization. For instance, social capital is argued to influence individuals' turnover intentions in the workplace, such that individuals with greater social capital will be less inclined to act upon intentions to quit (Vardaman et al., 2015). Thus, highly skilled employees may be less likely to search for external career opportunities due to the social capital they possess in the current organization. Additionally, the internal social capital of the firm influences the proactive personality of individuals within the firm (Thompson, 2005). The organization's social capital also impacts the organizational citizen behaviors of employees in the workplace (Leana & Van Buren, 1999),

which enhances the productivity of the individuals in the firm. The increase in individual performance influences an overall increase in organizational performance.

One of the leading arguments for the importance of understanding organizations' social capital arises from the influence social capital has on the performance of organizations. Research shows that the stocks and flows of social capital directly impact the firm's performance. Social capital stocks represent the accumulated bundle of social capital at a given time, while social capital flows depict the fluctuations in social capital over time (Sharma, 2008). Thus, social capital stocks impact the firm's performance as they represent the firm's bundle of resources, while flows of social capital are used to replenish the stocks of the firm's social capital. The potential resources arising from the firm's social capital allow the decision-makers to establish and employ effective strategic development for the firm. Likewise, social capital is linked to board effectiveness in firms, such that the increase in board members' social capital will enhance the firm's potential resources (Lester & Cannella, 2006). Stemming from the resource-based view, the overarching benefit of social capital for the firm is enhancing its competitive standing (Barney, 1991). An example of social capital advancing firms' competitive position is evident in firms' entrepreneurial behaviors.

Social capital research regularly promotes the benefits of social capital related to the entrepreneurial endeavors of the firm. One such entrepreneurial advantage resulting from more significant social capital is increased product innovativeness (Tsai & Ghoshal, 1998). The increase in social ties is directly related to firms' ability and willingness to expand the entrepreneurial endeavors taken to increase firm survivability. For instance, richer social networks are argued to increase the firm's innovative efforts, especially if the social ties share the same innovative ethos the firm possesses (Miller, Wright, Le Breton-Miller, & Scholes,

2015). The increase in innovation from social ties sharing the same innovative ethos occurs because multiple individuals collectively work on a common goal to expand the firm's innovation. Miller and colleagues (2015) also point out the dynamic nature of innovation and the positive impact co-creation from multiple stakeholders has on the successful indoctrination of innovation in the firm.

Similarly, research indicates that social capital influences the start-up decisions of nascent entrepreneurs in launching business ventures (Baron & Markman, 2003; De Carolis, Litzky, & Eddleston, 2009; De Carolis & Saparito, 2006). Social capital enhances cognition for pre-venture entrepreneurs and provides them access to other beneficial resources, such as start-up capital. Entrepreneurs with greater social capital are more likely to successfully form a new venture than entrepreneurs with less social capital. The growth of entrepreneurial ventures is another outcome linked to the entrepreneur's social capital, in which entrepreneurs with substantial social capital are posited to be more successful in growing their ventures than entrepreneurs with inferior social capital. As with new venture creation, social capital influences the growth of entrepreneurial ventures due to an increase in accessible resources, such as financial capital and new knowledge (Florin, Lubatkin, & Schulze, 2003; Liao & Welsch, 2005). Thus, social capital is essential in the survivability of entrepreneurial ventures, resulting in firms developing competitive advantages stemming from social capital. One category of firms that are argued to have an enhanced competitive advantage arising from social capital is family firms (Sirmon & Hitt, 2003).

2.2.2 Social Capital of Family Firms

Due to the sentiments that social capital development starts with the family (Bourdieu, 1986), the social capital of family members provides greater access to additional resources for

benefiting the ventures of entrepreneurial families (Estrada-Robles, Williams, & Vorley, 2020). Likewise, family involvement results in a potentially distinct manifestation of social capital (Randerson, Seaman, Daspit, & Barredy, 2020; Sirmon & Hitt, 2003). In assessing the distinct characteristics of family firms, research has identified social capital as a resource that may lead to particular advantageous outcomes for family firms. One such advantage is the family firm's ability to develop a market orientation through the enhanced capability to foster cooperative actions and share information with internal stakeholders (Cabrera-Suarez et al., 2011). Family firm social capital is also argued to generate financial value creation over generations due to the embedded social ties that lead to greater resource exchange among generations in the family business (Salvato & Melin, 2008). The family firm's social capital endows the family firm with a distinct resource due to the rich relational ties established prior to the formation of the family firm (Pearson, Carr, & Shaw, 2008; Sirmon & Hitt, 2003).

One of the leading tenants of social capital held by family business scholars is that the social capital exhibited in family businesses as a whole tends to be stronger and richer than the social capital that arises in nonfamily businesses due to the embedded ties that result from kinship (Hoffman, Hoelscher, & Sorenson, 2006). Therefore, family business scholars have identified distinct characteristics of social capital attached to family firms, with some scholars suggesting these factors lead to a competitive advantage for family firms (Sirmon & Hitt, 2003). The influence of familial ties not only makes social capital in family firms distinct from that of nonfamily firms, but the level of involvement also contributes to the variation of social capital found in different family firms (Andersén, 2015; Lichtenthaler & Muethel, 2012). However, not all social capital in family firms is a product of the family, as nonfamily stakeholders may contribute to the firm's bonding or bridging social capital.

Social capital viewed as a distinct resource of family firms results in extensive arguments regarding the different compositions related to family firms' social capital. In particular, family business scholars have discussed the social capital of family firms resulting from either a bonding or bridging perspective. Further, family firms' social capital is categorized based on which type of relationships are considered, i.e., family versus nonfamily stakeholders. The family versus nonfamily social ties are essential for the family firm, as research indicates how the bonding family ties influence the distinctness of social capital for family firms and how external nonfamily stakeholders can enhance sustainability in family firms (Zellweger et al., 2019). Likewise, research has highlighted the importance of relationships with nonfamily members inside the family firm for the performance of the family firm (Barnett & Kellermanns, 2006; Tabor, Chrisman, Madison, & Vardaman, 2018; Verbeke & Kano, 2012). Aside from the impact on nascent entrepreneurship (Chang, Memili, Chrisman, Kellermanns, & Chua, 2009; Edelman, Manolova, Shirokova, & Tsukanova, 2016; Lubberink, Blok, van Ophem, & Omta, 2015), much is left unknown about the external family stakeholders' influence on the social capital of the family firm.

2.3 Hypothesis Development

2.3.1 Bonding and Bridging Nature of Family Social Ties

The notion of family firms displaying more heterogeneity than nonfamily firms may be explored further from the idiosyncratic nature of family firm social capital development and maintenance. As is valid in all firms, family firms' social capital is described as bonding and bridging social capital (Arregle et al., 2007; Pearson et al., 2008; Sharma, 2008). However, the family members' influence on the family firm produces the idea that family firms have unique social capital characteristics (Arregle et al., 2007; Sirmon & Hitt, 2003). Such characteristics

result in a family firm's social capital developing from two areas, the family and the firm. Due to these two originating points for family firm social capital being part of the "collective" (i.e., the family as the collective and the firm as the collective), the literature portrays all social capital derived from family members of the family entrepreneur as bonding social capital. Thus, all bonding social ties with family members are equated with bonding social ties within the family firm. While this is a logical argument for the development of family social capital, this viewpoint is limiting when holistically assessing the social capital of the family firm. Extending the notion of family firm social capital development outlined in Arregle et al., 2007, the current research aims to introduce the possibility that both types of social capital – bonding and bridging – exist from the same stakeholder; family, as another unique characteristic of family firm social capital.

The dual existence of bonding and bridging social capital from family members is predicated on the notion that one of the family firm's defining characteristics, i.e., family involvement, transpires from all family stakeholders of the family firm (Gersick et al., 1997). Traditionally, the family firm social capital literature focuses on bonding social capital among stakeholders involved in the daily operations of the family firm. For instance, Pearson and colleagues (2008) focus on the bonding social capital of the family firm to examine the "social capital of the collective" (p. 956), thus, focusing only on the bonding social capital of the internal family members. However, family members can provide bridging social capital to the family firm when they are external stakeholders. This perspective is where the family firm's social capital is genuinely unique because the external stakeholders, that are also family members, may provide bonding and bridging social capital in different contexts of the family and the family business. While external family stakeholders may be a part of a nonfamily firm's social capital makeup, the distinct characteristics of family firms that lead to peculiar goals, governance, and

resources inform that family firms may leverage bridging social capital with external family stakeholders differently from nonfamily firms (Chrisman & Holt, 2016). Therefore, exploring the external family members' involvement in the composition of the family firm's social capital will provide a richer understanding of how family involvement with the family firm aids in a potential competitive advantage for the family firm.

Arregle et al. (2007) focus on the "family involvement in the firm" (p. 74) and approach the social capital of the family firm from the viewpoint of family members inside the firm. Tagiuri and Davis (1996) pointed out that family businesses experience influence from the family in multiple contexts. For instance, external family stakeholders are posited to influence the decision-making of the succession planning process (Daspit, Holt, Chrisman, & Long, 2016). By adapting Tagiuri and Davis's 3-circle model (1996), Figure 2.1 displays the multiple types of social capital that may exist for the family firm when considering the source of the social tie as either a family member (shown as *italicized* text) or nonfamily member (shown as regular text). While the social capital of the family firm originates with the social capital of the family in the firm (Arregle et al., 2007), the inclusion of the business context provides another perspective on the materialization of family firm social capital and the potential benefits that social capital provides a family firm. Thus, Arregle et al.'s (2007) conceptualization of family social capital is beneficial in understanding the development of bonding social capital among family members through the four dynamic factors of stability, interdependence, interaction, and closure fostered in the familial unit (Pearson et al., 2008), even if they are not involved in the daily activities of the family firm. For instance, a family member may not be involved in the family firm's daily activities or have ownership higher than 5% in the firm, thus making the social tie one that resembles bridging social capital with business family members. The 5% or lower ownership

suggests that the family member is not a blockholder nor involved in the decision-making (Villalonga & Amit, 2006). However, when the same individual is involved in a family function, such as a family dinner, they now contribute to bonding social capital through the familial tie. Therefore, the individual's involvement in the family firm will dictate if the social tie relevant to the business is classified as bonding or bridging.

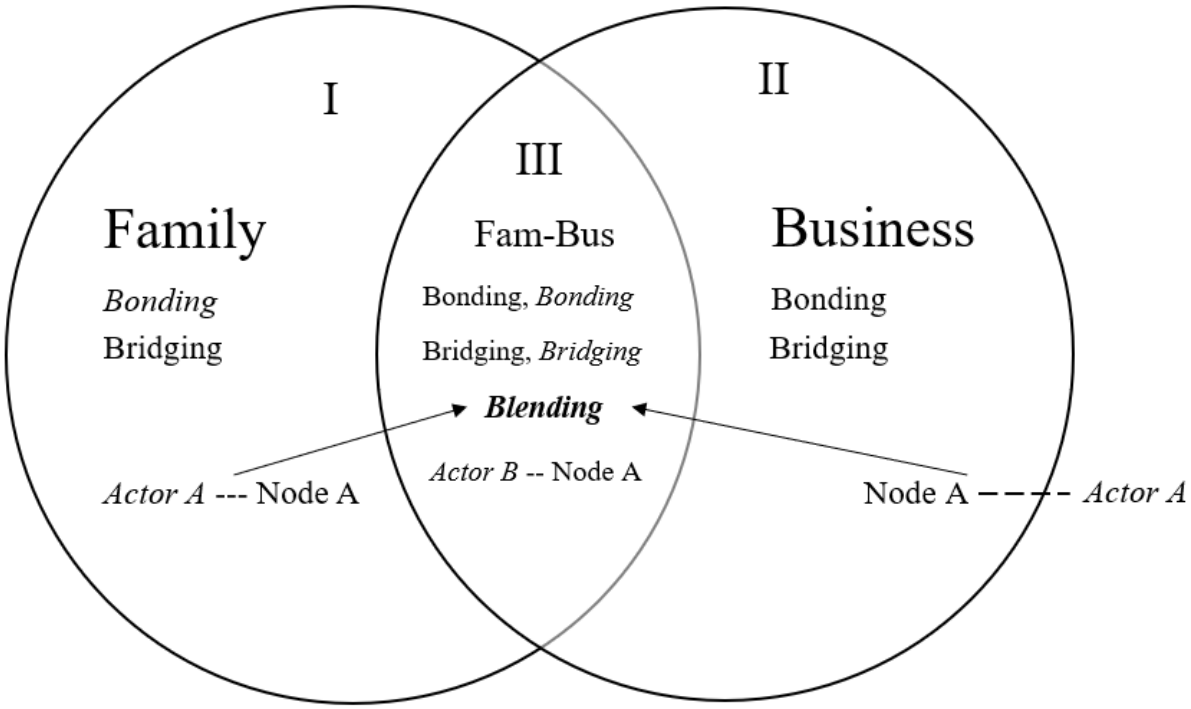

Figure 2.1 A Configuration of Social Ties

Italicized Text – Indicates social tie with family members
Regular Text – Indicates social tie with nonfamily members

The malleable existence of bonding and bridging social capital with the same family stakeholder of the family business can be further explained as the multiplexity of family firm social capital (Arregle et al., 2007; Portes, 1998). Multiplexity refers to the overlapping of an

actor's social networks, with the actor performing different roles in each social network (Boissevain, 1974). Due to this multiplexity, the resources derived from bridging social ties with family stakeholders may be richer than those derived from bridging social ties with nonfamily stakeholders. The richer resources come from establishing the dynamic factors of stability, interdependence, interaction, and closure from the bonding nature of the social ties emerging from being family members. Thus, this illustrates that social capital with family members is unique in that it may manifest as a dual tie.

The multiplexity of social ties with external family stakeholders is exemplified by Actor A in Figure 2.1, representing a family member that does not have significant ownership in the family firm (i.e., 5% or less) and is not employed by the family firm. As displayed in Region I, Actor A has bonding social ties with the family entrepreneur (e.g., Node A, which is the center of the network of social ties; Granovetter, 1973) in respect to the family. However, when referencing Region II, Actor A represents bridging social ties of the business due to being an external stakeholder. When viewing the merging of the family and the business in Region III, Actor A provides both bonding and bridging social ties that create *blending social capital* for the family firm, whereas, Actor B only represents bonding social capital due to being an employee of the family firm (i.e., membership of the firm's collective). As shown in this example, framing the social tie with the firm of the family, instead of solely with the family, introduces the blending nature.

As illustrated in Figure 2.1, social ties with external family stakeholders may be conceptualized as bonding social capital or bridging social capital depending on the role of the social actor (i.e., family member versus external stakeholder, respectively). Due to this paradigm of development for social ties with family members external to the family business, the term

blending social capital is proposed to represent the interaction of the bonding social capital and the bridging social capital found in social ties between external family stakeholders and the family firm. Thus, a formal definition of *blending social capital* is *the potential resource bundle that exists from the interaction of the bonding social capital and the bridging social capital that develops between firms and family members not directly involved in the firm.*

2.3.1.1 Benefits of Blending Social Capital

Blending social capital provides the family venture with a more copious form of an intangible resource due to the integration of bonding and bridging social capital from a single source. Thus, the firm's external family stakeholders impact the family firm's social capital formation. Blending social capital influences the stocks and flows of the social capital resource bundle for the family firm, as the family firm may enhance the stock of bonding social capital and bridging social capital from the same social actor (Sharma, 2008). Stocks of social capital include the bundle of social ties that make up the social capital at one given time, while the flows of social capital refer to the variation in stocks over time (Sharma, 2008). Therefore, the stocks and flows of social capital are posited to be richer from the inclusion of blending social capital with family stakeholders.

Blending social capital with family stakeholders may also provide an additional argument for the idiosyncratic nature of the relational capability found in family firms (McGrath & O'Toole, 2018). Relational capability refers to the, "ability to develop an inter-organi[z]ational partnering capability to gain access to resources held by other firms," (McGrath & O'Toole, 2018, p. 195). The family firm's relational capability may be enhanced when utilizing blending social capital versus bridging social capital with nonfamily members due to the stronger ties that

emerge from the kinship with family members while simultaneously possessing bridging ties from the family stakeholders' lack of involvement in the family business.

Likewise, the existence of blending social capital with family stakeholders provides a situation in which family firms may maintain a strong family identity while further establishing and developing their relational capability to propel the innovative behaviors of the family firm (McGrath & O'Toole, 2018). The relational capability is closely related to the relational dimension of social capital, which consists of the trust, norms, obligations, and identity found in the social ties (Cabrera-Suárez, García-Almeida, & De Saá-Pérez, 2018; Pearson et al., 2008; Salvato & Melin, 2008). Thus, the relational dimension of the social capital found between the family firm and external family stakeholders will have an enhanced relational dimension emerging from the familial bond, which will enhance the family firm's willingness to extend outside of the firm to gain access to resources for innovation. Enhanced dimensions of blending social capital further highlight the particularities of this type of social capital.

Similarly, the bonding social capital found in blending social capital may strengthen the other dimensions of social capital, i.e., cognitive and structural. The cognitive dimension of social capital refers to the, "resources providing shared representations, interpretations, and systems of meaning among parties," while the structural dimension of social capital consists of, "the overall pattern of connections between actors," (Nahapiet & Ghoshal, 1998, p. 244). The bonding social capital that arises from the family context increases the potential for the cognitive dimension of social capital to be more present with external family stakeholders than with external nonfamily members of the family firm. The reason for the stronger cognitive dimension with external family stakeholders is a result of the shared *family* vision, language, stories, and culture instilled from the bonding social ties arising out of the family structure (Aragón-

Amonarriz, Arredondo, & Iturrioz-Landart, 2017; Cabrera-Suarez et al., 2018; Pearson et al., 2008). The shared family vision, language, stories, and culture elicit a social tie in the bridging social capital of the family firm that already has shared cognition indoctrinated due to the familial bond (Coleman, 1988; Pearson et al., 2008). The structural dimension of blending social capital with family stakeholders should possess the benefits of strong and weak ties. Considering the family firm context, the bonding social capital of the familial tie with external family stakeholders allows for a stronger social tie than found with external nonfamily stakeholders. Likewise, the bonding social tie with external family stakeholders will have a weaker social tie than is established with internal family stakeholders of the family firm. The weaker social tie emerging from the bridging social capital facet of blending social capital allows the family firm to have access to more structural holes (i.e., more connections), which is argued to be conducive to greater resource access (Granovetter, 1973).

Additionally, the bonding social capital present in blending social capital allows the family firm to readily access resources, such as knowledge, from a source where trust may already be embedded. On the other hand, the bridging social capital included in the blending social capital allows the family firm access to greater boundary-spanning resources for the family firm. External family stakeholders allow for diverse knowledge and a larger pool of knowledge by facilitating the link to other potential external social ties that the family firm would not have access to when solely utilizing the bonding social capital inside the family firm. Bridging social capital with family stakeholders is more reliable than bridging social capital with nonfamily stakeholders because of the familial tie, which leads to bonding social capital existing outside the family firm context. Additionally, the complexity of the multiple roles of family stakeholders lending to the creation of blending social capital introduces another potential

explanation of why the social capital of family firms may be more unique than the social capital of nonfamily firms.

While it is true that nonfamily firms may have more opportunities for external social ties with family members, in turn creating greater blending social capital (Steier, 2007; Zellweger, Chrisman, Chua, & Steier, 2019), the social ties with external family stakeholders are posited to be distinct in family firms. Blending social capital is argued to be distinct in family firms due to the importance placed on this type of external social tie in family firms. Family firms' emphasis on blending social capital may be a product of their reluctance to participate in radical innovation (Goel & Jones, 2016). Blending social capital introduces a greater willingness for the family firm to navigate outside the firm's boundaries for resource acquisition, thus mitigating their reservations for exploratory innovation. On the other hand, nonfamily firms display fewer inhibitions for radical innovation, which informs the argument that blending social capital will have less of an impact on the innovativeness of nonfamily firms. Additionally, nonfamily firms having less inclination to frame noneconomic goals in their decision-making process results in fewer impediments to their exploratory innovation (DeMassis et al., 2015; Gomez-Mejia et al., 2007). Therefore, the enhanced willingness to seek resources from external family stakeholders (i.e., exploratory innovation) leads to the inference that blending social capital will have a greater influence on family firm innovation than nonfamily firm innovation.

Family firms benefitting more from blending social capital also stems from the notion of family firms possessing distinct goals, governance, and resources, such as the higher level of importance placed on noneconomic goals (Chrisman & Holt, 2016). By having a greater disposition to focus on the firm's noneconomic goals, family firms may be more likely to utilize the blending social capital of the firm for innovation. Since family firms have greater family

involvement (i.e., more family members involved in the business) than nonfamily firms, the propensity to be cognizant of noneconomic goals is higher in family firms. For instance, family firms place a higher focus on retaining family control and upholding the family's reputation in the firm than nonfamily firms do (Berrone, Cruz, Gomez-Mejia, 2012). Gaining access to external resources from the blending social capital may lessen the perceived risk to the family's control or reputation when choosing to extend outside the family firm for resources (Patel & Fiet, 2011). The family's control is protected due to external resources emanating from family members outside the firm, which keeps resource trading within the family context.

Increased family involvement within family firms creates a culture in which greater psychological links are shared between family members inside and outside the firm. Research indicates that the social identities of family members are highly correlated with the organizational identity attached to the family firm (Tagiuri & Davis, 1996). As these identities increase in symmetry, family members will behave in ways to preserve the image of the family in the business (Cennamo, Berrone, Cruz, & Gomez-Mejia, 2012). While external family members are not directly involved in the family business, they are still linked to the business through the family bond and may behave in a way that preserves the firm and family name.

Similarly, family firms' psychological links may be peculiar due to the increased family involvement in these ventures (Sharma, Chrisman, Chua, & Steier, 2020). The increased psychological links occur through the values, histories, and stories embedded in the family that are shared with external family stakeholders (Chrisman, Chua, & Zahra, 2003; Pearson et al., 2008), in turn instilling a closer relationship with external family stakeholders. One benefit of closer relationships is increased trustworthiness (Nahapiet & Ghoshal, 1998). By acquiring resources from trustworthy family stakeholders, the family firm improves the likelihood of

sustaining family control. Thus, blending social capital may act as a form of "pseudo-family involvement" for the firm due to achieving family input through accessing external resources from family stakeholders that are not formally involved in the daily activities. As the family firm grows, the external family members may be the first group of stakeholders that the family entrepreneur wishes to bring into the firm to retain family involvement (Chua, Chrisman, & Bergiel, 2009). Therefore, resource accumulation from an external familial source is more likely to be exploited than from an external nonfamily source.

Likewise, in gaining potential resources through blending social capital from external family stakeholders, family firms can access benefits from external stakeholders that value a similar goal of defending the family image associated with the family firm, thereby preserving the family's reputation. Thus, blending social capital enables family firms to access external resources without sacrificing their noneconomic goals, particularly reputation. Blending social capital likewise increases the willingness of the family firm to seek external resources due to enhancing the ability to access external resources with lower risk to noneconomic goals.

In considering another perspective of the willingness-ability paradox, external family stakeholders may be more willing to share their social capital with family members of a family firm than with family members of a nonfamily firm. The willingness of the external family stakeholders to share resources may be enhanced for family firms since this type of firm includes a larger number of family members involved and a higher majority of decision makers being family members. External family stakeholders may be more willing to share their social capital with a relative's family firm than a nonfamily firm because the likelihood of the social capital being opportunistically expropriated is less with the family firm. There is a lower chance for the family firm to misuse the social capital of external family stakeholders due to the importance

placed on upholding the family's image and reputation. The inclusion of more family members in the family firm will ensure that the noneconomic value of the family will be maintained and prioritized, which aligns with protecting the social capital of external family stakeholders. Likewise, the shared values embedded in the familial tie ensure that the resources loaned will be used appropriately. Thus, the inclusion of more family members in family firms creates greater checks and balances for protecting and ensuring the proper use of external family stakeholders' social capital. As a result, external family stakeholders will be more willing to lend their social capital to family firms over nonfamily firms. With the increased willingness of external family stakeholders to share their social capital, the family firm's ability to utilize blending social capital is greater than that of nonfamily firms, enriching the family firm's ability to innovate.

Therefore, due to lessening family firms' reluctance to pursue radical innovation, preserving noneconomic goals (such as retaining family involvement and maintaining the reputation of the family in the business), and closer relationships and trust among the parties involved (i.e., family firm and external family stakeholders), blending social capital is argued to provide greater benefits to family firm innovation than nonfamily firm innovation.

Hypothesis 1: Blending social capital with family stakeholders will have a greater impact on the innovation of family firms than the innovation of nonfamily firms.

2.3.2 Family Firm Social Capital and Entrepreneurial Behavior

As highlighted in the family firm literature, unique access to social capital gives family firms a potential competitive advantage (Barney, 1991; Carney, 2005; Eddleston, 2011; Sirmon & Hitt, 2003). Such potential benefits include greater market orientations (Cabrera-Suárez, Déniz-Déniz, & Martín-Santana, 2011) and access to additional non-tradable assets (Gedajlovic & Carney, 2010), which lead to greater firm performance and profitability for the family firm

(Hoelscher, 2014; Jimenez, Martos, & Jimenez, 2015; Salvato & Melin, 2008; Sanchez-Famoso, Akhter, Iturralde, Chirico, & Maseda, 2015). One of the primary competitive advantages of interest in the family firm social capital literature is the firm's ability to act entrepreneurially (Chang et al., 2009; Chirico & Salvato, 2016; De Clercq & Belausteguigoitia, 2015; Patel & Fiet, 2011). The social capital of the family firm is argued to influence the nascent entrepreneurship intentions of the family entrepreneur, in that familial ties encourage them and assist in the process of starting an entrepreneurial venture (Chang et al., 2009; Discua Cruz et al., 2013; Morris, Allen, Kuratko, & Brannon, 2010). The increase in assistance and encouragement for new venture creation arises from access to greater benefits, such as financial support, know-how, know-what, and know-who, from members of the entrepreneur's family.

Similarly, the embeddedness with family members in the family firm (i.e., bonding social capital) is argued to increase knowledge acquisition and transferability for enhanced opportunity recognition (Patel & Fiet, 2011). In turn, the family firm's social capital is argued to enhance innovative behaviors, such as product development (Chirico & Salvato, 2016) and continued renewal through transgenerational shifts (De Clercq & Belaustequigoitia, 2015). Even though bonding social capital with family members is conceptualized to enhance exploration efforts, loss aversion often discourages them from investing in radical products (Chrisman, Chua, & Steier, 2011). The increase in bonding social capital with family members instills closure in the family firm, which inhibits the willingness to seek external resources (e.g., knowledge) necessary for exploring opportunities (Andersén, 2015; Miller et al., 2015; Pearson et al., 2008). This lack of willingness to search for external resources is further exemplified by family firms' reluctance to participate in external collaboration, i.e., utilize external benefits from bridging social capital (Kotlar, De Massis, Frattini, Bianchi, & Fang, 2013; Nieto, Santamaria, & Fernandez, 2015).

However, the inclusion of blending social capital in the family firm's social capital bundle is posited to increase the family firm's willingness and ability to seek external resources, in turn enhancing its innovative efforts.

2.3.2.1 Blending Social Capital with Family Stakeholders and Innovation

Social ties with family members, bonding and bridging, provide insights into family entrepreneurial decision-making (Bauweraerts & Colot, 2015; Chang et al., 2009; Edelman et al., 2016). Research indicates that bridging social ties influence the start-up decision-making process of family entrepreneurs (Dyer, Nenque, & Hill, 2014; Edelman et al., 2016; Lubberink et al., 2015; Rodriguez, Tuggle, & Hackett, 2009). The social capital found in the household of entrepreneurs is a driving factor of start-up intentions and actions (Rodriguez et al., 2009). In exploring the household capital - or bundle of resources found from social ties within the household - of new ventures, Rodrigues and colleagues (2009) find that marriage and the household composition play an integral role in the new venture creation of entrepreneurs. However, Lubberink and colleagues (2015) show that household capital does not influence the start-up intentions of entrepreneurs, yet, once the decision is made to start a new venture, entrepreneurs utilize family capital (social, human, and financial) in aiding venture creation.

Additionally, the inclusion of family in all facets of the firm's social capital influences opportunity identification and the success of start-up family firms (Anderson et al., 2005; Sharma, 2008; Steier, 2009). The importance of external family social ties as a resource for entrepreneurial endeavors can also be seen in Edelman et al.'s (2016) study, which found that family social capital is highly indicative of start-up activities, while family financial capital does not have an influence. Likewise, Dyer et al. (2014) argue that increased social ties with extended family will increase the ambitions of nascent entrepreneurs to start a family firm. By contrast,

Bird and Wennberg (2016) find that immigrant entrepreneurs do not rely on family social capital in starting an entrepreneurial endeavor. However, this may be attributed to immigrant entrepreneurs being less able to interact with family members from abroad, which is a key antecedent for developing family social capital (Pearson et al., 2008).

Likewise, firms' bridging social capital is typically associated with weaker social ties, such as with business associates (Anderson, Jack, & Drakopoulou Dodd, 2005). The weak nature of bridging social capital results in these social ties having a less emotional connection and infrequent contact with the firm. However, blending social capital with family stakeholders will present a particular form of social capital with stronger embedded social ties than bridging social capital with nonfamily stakeholders. The strength of the social tie may allow the family firm to have greater access to external information critical for entrepreneurship (Anderson et al., 2005). Similarly, blending social capital with family stakeholders may reduce the overlap of social ties compared to solely relying on bonding social capital with family members. Blending social capital with family stakeholders may also provide the family firm with additional resources that aid entrepreneurial behavior (Anderson et al., 2005). While external family stakeholders are not directly involved with the family firm, they may still be more likely to champion the family firm to other individuals, thus providing a benefit from the bridging social capital facet of the family firm's blending social capital. Therefore, the development and maintenance of social capital with external family stakeholders provides the family firm access to a more diverse set of social capital than if they were only to develop and maintain bonding social capital with family members internal to the family firm. In turn, the combination of bonding social capital and bridging social capital contained in blending social capital introduces several additional advantages for the family firm, which may enhance innovative efforts.

Blending social capital with family stakeholders may also influence family firms' entrepreneurial performance by strengthening the dimensions of the family firm's social capital. Kinship ties, especially the structural and cognitive dimensions, are imperative for family entrepreneurs to acquire the necessary resources to perpetuate firm performance (Khayesi, George, & Antonakis, 2014). In response to Khayesi et al.'s (2014) study, Daspit and Long (2014) suggest that the relational dimension of social capital can aid in explaining the entrepreneurial kinship ties and the moral hazards that are likely to arise in being an entrepreneur in an emerging economy. Thus, by enhancing the trust, norms, and values shared with external family members (mitigating moral hazards), family entrepreneurs can leverage social capital for better resource accumulation and increase firm performance (Daspit & Long, 2014). Additionally, blending social capital allows a greater chance of preserving family values and resources (De Massis et al., 2015). The influence of bridging familial social ties for nascent entrepreneurship and entrepreneurial behaviors informs the importance of maintaining and activating these social ties throughout the family firm's duration to enhance entrepreneurial behaviors.

Another resource that may be borne out of blending social capital is financial support (Van Auken & Werbel, 2006). One potential benefit of increased financial capital through blending social capital with family stakeholders in the family firm is increased opportunities for access to survivability and patient capital (Arregle et al., 2007; Sirmon & Hitt, 2003). Thus, due to the bonding social capital arising from kinship with family stakeholders, a greater chance occurs that the family firm may access emergency loans and low-cost labor (survivability capital) and/or long-term capital with less pressure for quick returns (patient capital) from external sources. In essence, this strengthens the overall benefits from the social capital of the

family firm as the family firm can potentially access resources that would not be as accessible from bridging social ties with nonfamily stakeholders. However, the increased number of network connections from external stakeholders (i.e., know-who) also increases the potential for access to financial capital for innovation efforts in the family firm, as external family stakeholders may be willing to "lend" their relationships with other capital providers (Chua, Chrisman, Kellermans, & Wu, 2011; Steier, 2007). As Steier (2007) displayed, social contacts of external family stakeholders may provide the family firm financial capital simply because the family entrepreneur is a family member with their mutual social contact (i.e., the external family stakeholder). Likewise, Zellweger and colleagues (2019) note the potential influence that "extra-family social relationships that exist between family members not directly involved in the family firm and nonfamily individuals and groups" (p. 208) may have on the development of resources in family firms. Thus, more options for financial capital increase the ability of the family firm to innovate.

The availability of additional sources of financial capital increases the family firm's ability to explore activities for new products or technologies. The potential access to additional capital may also enhance the availability of new resources (materials, intellectual property rights, R&D expenditures, etc.) required to employ explorative innovation endeavors. On the other hand, additional financial capital sources will strengthen the family firm's ability to implement incremental changes to the internal processes, resources, and products and services to remain competitive. Having access to long-term capital that is free of pressures to turn a quick profit, family firms may be more willing to invest in existing core competencies to enhance innovativeness. Thus, access to patient capital from external family stakeholders may enhance the ability and willingness of the family firm to access external financial capital for innovation

efforts, which contradicts the propensity of family firms to be reluctant and less likely to secure financial capital from outside the family (Sirmon & Hitt, 2003).

Furthermore, bridging social capital is argued to enhance the entrepreneurial behaviors of firms (De Massis, Frattini, Pizzurno, & Cassia, 2015; Zahra, 2010). In particular, the social ties that extend beyond the organization are posited to increase information on the external environment, which increases opportunities identified and pursued by the organization (Seaman, McQuaid, & Pearson, 2014). Likewise, firms that can include both arms-length transactions and embedded ties, i.e., bridging and bonding social capital, are more likely to experience incremental and radical innovation than firms that utilize only one or the other type of social tie (Uzzi & Lancaster, 2003; Martinez & Aldrich, 2011). Therefore, family firms may intensify their opportunity exploration efforts by increasing resource accumulation from their bridging social capital. Identifying and pursuing greater opportunities expands the business creation and development of the family firm (Seaman et al., 2014). Including cohesive ties in the family firm's social capital tends to foster behavior based on imitation, which leads to an increase in incremental innovation. The imitative behavior and incremental innovation stem from the similarity of knowledge found in close, bonding social ties. With the inclusion of boundary-spanning social ties, i.e., bridging social capital with external family stakeholders, family firms may be more likely to experience innovation due to an increase in diverse knowledge from an external source (Martinez & Aldrich, 2011). The importance of bridging social capital for the radical innovative behaviors of family firms led Martinez and Aldrich (2011) to proclaim the development and maintenance of bridging social capital as a critical influencer to entrepreneurial success. Introducing different viewpoints from external family stakeholders may also increase the chances of creating new combinations with the family firm's resources, enhancing the firm's

innovation (Schumpeter, 1934). Therefore, developing and maintaining blending social capital may increase the utilization of resources from bridging social capital to enhance family firms' entrepreneurial success.

Family firms are argued to rely on bonding social capital with family members, thus favoring social ties with greater closure (Arregle et al., 2007; Veider & Matzler, 2016). Including social ties in the family firm's social capital that blends bonding and bridging characteristics may enhance the ability and willingness of the family firm to advance the firm's knowledge. The assimilation, transference, and internalization of knowledge are crucial for identifying opportunities in the family firm (Chirico & Salvato, 2016). Therefore, the inclusion of bonding and bridging social capital with external family stakeholders may enhance the knowledge collected by the family firm, which enhances the assimilated and internalized knowledge of the family firm. The blending social capital further exemplifies the notion of family members, inside and outside the family firm, being fundamental for the development of knowledge (Cabrera-Suarez et al., 2018). By using blending social capital, the family firm will likely increase the intangible benefits for facilitating enhanced innovation.

Another potential advantage arising from blending social capital is the family firm’s access to richer knowledge resources owing to the inclusion of bonding social capital and bridging social capital. Knowledge is a crucial resource provided by social capital in that, “social capital facilitates access to broader sources of information and improves information quality, relevance, and timeliness,” (Adler & Kwon, 2002, p. 28). The literature highlights that exclusively relying on bonding social capital may limit the firm's innovative behaviors due to conformity, "groupthink," and dismissing new information (Leana & Van Buren, 1999; Zahra, 2012). For instance, Arregle and colleagues (2015) suggest that an overreliance on redundant

information and a disposition to ignore external knowledge are symptoms of depending solely on bonding social capital typically characterized in family firms. Hence, the leveraging of bridging social capital is identified as a critical component of exploring opportunities effectively, which family firms are typically characterized as inadequately employing (Brundin & Wigren-Kristoferson, 2013; De Massis et al., 2013; Duran et al., 2016; Lumpkin, Brigham, & Moss, 2010).

Likewise, the diverse knowledge transferred from external family stakeholders is instrumental in gaining new information for the innovation process (Lavie & Rosenkopf, 2006; Salvato & Melin, 2008). The diversity of knowledge originates from the different clusters (inside the family firm and external to the family firm) possessing heterogeneous knowledge (Burt, 2019). The bridging social capital facet of blending social capital may increase boundary-spanning knowledge, in which the family firm's ability to identify new means-ends relationships for propelling the firm's competitive position increases (Shane & Venkataraman, 2000). Such novel means-ends relationships may result from an awareness of new resources and skills the family firm may acquire, increased market knowledge, and advanced processes that the family firm can implement to enhance value. Thus, the diversity in knowledge about the external environment increases the firm's knowledge about potential opportunities the family firm may pursue.

Additionally, information gained from external family stakeholders may be valued higher as it originates from a potentially more trustworthy external tie (Eddleston & Morgan, 2014). The trustworthiness between the parties will be higher as a familial bond exists between the family business decision-makers and external family stakeholders. Likewise, establishing trust in the external relationships with external family stakeholders may emerge more promptly due to

familial connections. The increase in trust allows for a more beneficial external relationship for achieving a competitive advantage for the family firm (Eddleston, Chrisman, Steier, & Chua, 2010). Enhanced trustworthiness may impact the degree to which the family business acts upon the information shared about potential opportunities in the external environment. Therefore, by having external social ties with family stakeholders, family firms may be more willing to "leveraging external sources of knowledge to cope with the increasing costs for the creation of new knowledge," (De Massis, Di Minin, & Frattini, 2015, p. 8).

Furthermore, the types of knowledge accessed from blending social capital are argued to be richer than the knowledge accessed through bridging social capital with nonfamily members. The access to richer knowledge is due to the typical knowledge present in bridging-only social ties; know-who and know-what. In the social capital literature, one of the benefits of bridging ties is having more indirect contacts to expand the node's network (Burt, 1992). Once the social ties are strengthened, the node may have access to some of the additional actors' knowledge, leading to greater know-what. However, both types of knowledge are equivalent to explicit knowledge, as it is easy to transfer between social actors (Borgatti & Foster, 2003). One characteristic of these boundary-spanning ties is the time and effort it takes to develop stronger connections with these individuals (Payne et al., 2011). Thus, the family business will have to expend greater resources to establish and nourish the bridging social capital with nonfamily members to access more explicit knowledge, as the social ties with external family members are pre-established through the family tie.

Therefore, family businesses may access know-who and know-what types of knowledge while using fewer resources (e.g., time) if they extract these benefits from the blending social capital with family stakeholders. Family business social capital with family stakeholders is

established prior to the formation of the family business and maintained outside of the family business. Thus, this may grant the family business an established network of boundary-spanning social ties without putting in a greater amount of time and effort into gaining access to the benefits. Likewise, the bonding social capital in the blending social capital with family stakeholders presents family businesses with the possibility of accessing another type of knowledge from these external actors, i.e., know-how.

By having a stronger connection with the family stakeholders from the familial tie, family businesses may be able to extract richer knowledge about "how" to improve existing processes or "how" to introduce new products to enhance their innovative efforts. Therefore, one of the overarching benefits of blending social capital with family stakeholders is the potential for more robust explicit knowledge to be gained from the family business's external relationships. The possibility of gaining stronger explicit knowledge arises from the bonding social capital in the blending social capital, as the familial tie enhances the closeness of the external social tie. Know-how knowledge may be exchanged through family stakeholders by sharing their skill set and allowing the family entrepreneur to observe and practice this skill set outside of the family business. For example, while at a family cookout, an external family stakeholder may show the family entrepreneur a new computer program and a machine they purchased for improving the fabrication of metal parts for their automobile renovation project. The family entrepreneur may ask the family member (i.e., external family stakeholder) to show them how the software and machinery work and even ask to try it out. Upon working with the computer program and machinery, the family entrepreneur sees the potential that the computer program and machine offer for increasing the delivery of the family firm's products, i.e., enhancing the technology of the family firm for innovation. Also, the increased frequency of contact with family stakeholders

enhances the potential for knowledge to be shared with the family entrepreneur, influencing innovation in the family business.

As discussed with access to greater financial capital, one additional resource from blending social capital could be access to the external family stakeholders' social capital. The family firm's bridging social capital is broadened by accessing the external family stakeholders' social ties (Adler & Kwon, 2002). An increase in diversity of knowledge for the family firm may emerge from the increase in external social ties that could be accessed through the external family stakeholders' network. The referral of social ties from external family stakeholders may increase the family firm's willingness to utilize the information obtained from these external individuals. Thus, access to greater knowledge from an extended bridging social capital may enhance the ability of the family firm to identify potential new means-ends relationships. Therefore, due to access to diverse and trustworthy knowledge, greater financial capital sources, and other potential resources from external family stakeholders, the extent of family firms' innovation is enhanced with the inclusion of blending social capital.

Hypothesis 2: Blending social capital with family stakeholders will positively influence the extent of innovation of the family firm.

2.3.3 Familial Tie as a Moderator

When considering the social ties with family stakeholders, an important distinction is the type of familial tie that exists with the family stakeholders. A prevailing notion in family business research is that different types of familial ties may have different influences on the family firm (Aldrich & Cliff, 2003; Gersick et al., 1997; Jaskiewicz & Dyer, 2017). For instance, later generations are more likely to professionalize the family firm than earlier generations (Stewart & Hitt, 2012), and in-laws influence the succession behaviors of family firms and their

intention to remain an entrepreneurial family (Jaskiewicz, Combs, & Rau, 2015) are prevailing arguments for explaining idiosyncratic behaviors of family firms. Similarly, marriage is one of the crucial familial ties to consider when assessing the influence of family stakeholders on the family firm's success (Van Auken & Werbel, 2006). Therefore, different types of familial ties may be important in influencing the entrepreneurial behaviors of the family firm.

One approach for assessing the various types of familial ties in the family firm is to consider the strength of the familial tie with the family entrepreneur. In particular, stronger familial ties with the family entrepreneur increase the likelihood that the social tie will manifest with higher resource mobilization. Alternatively, as the social tie with the family entrepreneur weakens, the higher the chance that the social tie will manifest with less resource mobilization. The arguments for familial tie strength are predicated on the assumption that as the relationship between the external stakeholder and the entrepreneur strengthens, the amount of closure and interactions will increase (i.e., enhancing intimacy, frequency, intensity, and services; Mathews et al., 1998). Therefore, the strength of the familial tie is argued to augment the resource of blending social capital and, in turn, impacts the relationship between blending social capital and the entrepreneurial behaviors of the family firm.

2.3.3.1 Blending Social Capital and Familial Tie Strength

Social tie strength is a well-established method for assessing the characteristics and content of relationships (Granovetter, 1973; Smith, Collins, & Clark, 2005). Social tie strength is evaluated on the frequency, intensity, intimacy, and services shared in interactions between the ego and the alter (Mitchell et al., 1998; Morrison, 2002). Individuals are more willing to share knowledge and other resources with social ties they have strong connections with, while people tend to be more reserved in exchanging resources with their weaker social ties (Smith et al.,

2005). Thus, the strength of the familial tie with external family stakeholders should impact the strength of the firm's blending social capital, in turn impacting innovation.

Weak familial ties are argued to manifest blending social capital with lower external resource access, arising from the lack of closeness and frequency of interactions with the family entrepreneur. Limited resource access from the social tie may mitigate the ability of the family entrepreneur to utilize blending social capital for acquiring new knowledge necessary for innovation (Rothausen, 2009). Likewise, weak familial ties between family stakeholders and the family entrepreneur may establish blending social capital with less information transfer, limiting new information such as, updating processes, adapting products and services, or introducing new technologies in the family firm. Access to specific external resources, such as financial capital, may be restricted for the family business when depending on the blending social capital among family stakeholders with less willingness to share their resources. For instance, access to financial capital will be doubtful from the blending social ties when considering certain weak familial ties, i.e., an estranged sibling, as they may be less willing to help the family they no longer associate with.

On the other hand, stronger familial ties among external family stakeholders and the family entrepreneur may provide the family business with blending social capital that allows for greater resource access. Having stronger familial ties with external family stakeholders results in social ties with more loyalty, trust, reciprocity, and commitment, which is ideal for freely exchanging adequate knowledge for renewed perspectives that may reinforce the innovative efforts of the family firm (Arregle et al., 2015; De Massis et al., 2015; Goel & Jones, 2016). External family stakeholders with stronger familial ties may willingly provide the family business with knowledge about new markets, new products and services, or new processes that

further enhance the family firm's innovation. Thus, the potential for more diverse perspectives is increased due to the strength of the familial tie in the blending social capital.

Strong familial ties with external family stakeholders may allow the family firm access to additional resources for enhancing innovation behaviors through blending social capital. Stronger familial ties that foster trust and reciprocity may increase the willingness of the external family stakeholder to share their social contacts with the family entrepreneur, in turn providing more opportunities to connect with other social networks that may not be available from blending social capital with weaker familial ties (Granovetter, 1973). Access to more social networks will enhance the diversity of privileged knowledge available to the family business to enhance its competitive stance. Also, blending social capital from family members with stronger ties may provide an additional source of financial capital for the family firm to access when investing in innovative endeavors. Additionally, the financial capital, paired with diverse knowledge from stronger familial ties in the blending social capital, will have a higher impact on the innovative efforts of the family firm.

Accordingly, the blending social capital will manifest from multiple types of relationships with external family stakeholders. Because of this, the degree of readily exchanging resources between the node and actors will be weighted differently depending on the strength of familial ties included in the mix. For instance, an external family member with weaker familial ties shifts the balance of willingness such that less resource mobilization is included in the mixture of blending social capital. However, an external family member with stronger familial ties will foster blending social capital with a higher willingness to exchange resources. Due to the potential increased availability of novel information, external connections, and access to

other benefits, blending social capital with a makeup of stronger familial ties enhances the greater innovative efforts of the family business experienced from blending social capital.

Hypothesis 3: When familial ties are stronger, the impact of blending social capital with external family stakeholders on the innovative efforts of the family firm will be enhanced.

2.3.4 Family Stakeholder External Business Ownership as a Moderator

When discussing the influence of social ties, research indicates that the position held by the social connection may have a greater impact on the richness of the potential resources that may be shared (Coleman, 2000). Social contacts with people in prominent positions offer more valuable resources available through the firm's social capital. For instance, the reputation associated with prominent positions may have greater weight than the reputation that can be extracted from individuals in lesser roles. Likewise, having social ties with individuals in similar positions increases the chances of the resources being more beneficial for the individual with access to these resources (Glover, 2013). With that, external family stakeholders who own and operate a business will have a greater impact on the positive relationship between blending social capital and the extent of the family business's innovation. The argument for the enhancing interaction effect is due to the potential greater knowledge that can be accessed from external family stakeholders that are business owners and the increased access to other beneficial resources.

The knowledge originating from an external family stakeholder, who is a business owner, may provide more context-specific information that further facilitates the family firm's entrepreneurial process, such that an increase in innovative behaviors will emerge from the blending social capital. The higher quality business knowledge accessed from social ties with external family stakeholders that own a business may reinforce the ability of the family firm to

identify additional resources the family firm should acquire to remain competitive. Additionally, the knowledge from external family stakeholders that are business owners supplies the family business with greater information about the family firm's external market. The increased knowledge about the external market may allow the family firm to identify novel means-ends relationships that would not emerge from external family stakeholders who do not own businesses.

Likewise, the inclusion of external family members that are business owners enhances the credibility and richness of the knowledge the family firm can use to advance the family business's innovative efforts. Discussing "shop" with other business professionals will allow the family business decision-maker to increase their knowledge about other businesses' strategies and what resources they use to remain competitive. Having a family member as an outside liaison in the business community should enhance the willingness for knowledge exchange between the family business and the external family stakeholder. External business owners who are family may only be privy to some of the daily activities of the family firm; however, they may still provide helpful insight into perfecting the family firm's internal processes. The valuable insights on improving the internal processes may stem from the external family business owners sharing information about the daily operations of their businesses. By providing information about methods they use in their business for greater productivity, external family stakeholders who own a business may provide the family business with the knowledge to improve efficiency and quality. In discussing business with external family stakeholders that own a business, the family firm may increase the recognition of the need for improving the firm's processes.

Additionally, external family stakeholders that are entrepreneurs will have more understanding of the activities of operating a business, enhancing the knowledge shared from

blending social ties. External family stakeholders that are business owners may provide practical knowledge that will aid the family business in identifying best practices and, more importantly, strategies for successful innovative endeavors. By having access to external family stakeholders that are business owners, sharing "success" and "failure" stories may occur more honestly and freely due to the trust established from the familial tie (Lester & Canella, 2006). External family stakeholders may be more willing to allow the family entrepreneur to visit the family stakeholder's business to gain knowledge about business practices in real-time, providing a scenario where know-how knowledge may be gained. Thus, having greater access to business knowledge may enhance the ability of the family firm to strengthen core competencies to increase its competitive stance. Likewise, frequently exchanging information with external family stakeholders that are business owners may increase the family firm's willingness to refine internal processes to increase the efficiency of the firm's resources.

Furthermore, external family stakeholders who own a business can provide greater access to beneficial resources from blending social capital. The increase in potential resources arising from business ownership of external family stakeholders may lead the family firm to explore opportunities in the external environment successfully. One resource business-owning external stakeholders may provide is access to an established business network. By inclusion in an established business network, the family firm will have access to more beneficial social ties, thus enhancing the social capital of the family firm. The increase in access to business professionals may further enhance the opportunities for the family firm to identify new processes not yet being implemented by the firm. Connecting with an established business network may also provide the family firm with access to new technologies, new markets, and complementary knowledge that will aid in the innovative efforts of the family firm (Ring, Peredo, & Chrisman, 2010). Thus,

through enhanced business knowledge and the potential access to more advantageous resources, the inclusion of external family stakeholders that are external business owners increases the positive relationship between blending social capital and family firm innovative efforts.

Hypothesis 4: When external family stakeholders own an external business, the impact of blending social capital with external family stakeholders on the innovative efforts of the family firm will be enhanced.

CHAPTER III

METHODOLOGY

3.1 Data Collection

The data was collected from multiple sources, which include 1) surveying entrepreneurs on Proflic's platform for the pretest and main study, 2) surveying registered agents of active, for-profit businesses listed in the Mississippi Secretary of State's Corporations Report[1] for the main study, 3) information collected from the U.S. Copyright Office (USCO) and the U.S. Patent and Trademark Office (USPTO) for the main study, and 4) the U.S. Census Bureau's American Community Survey (ACS) for the main study. The survey was conducted using a two-wave method. The reason for the two-wave approach (Wave 1-survey and MS-SOS database, Wave 2-survey, USCO, USPTO, & ACS databases) is to limit common method bias that may emerge from collecting data on the independent and dependent variables from the same survey (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). The survey for Wave 1 captured family firm identification, the independent variable (IV) and moderating variables for the main study, and the dependent variable (DV) for robustness testing, while the survey for Wave 2 collected data on the alternative IV measure for the robustness testing, control variables, and the DV for the main study (See Table 3.1 for survey instruments). The second wave of the study was conducted 2-

[1] 6,000 Mississippi businesses were identified by utilizing the random number generator feature in Excel. Then each business's email for the registered agent was collected by searching that business name in the MS-SOS database and viewing their annual statement. If the registered agent's email was from a CPA firm or law firm, the business was not used, and the next business on the list was assessed (unless the business was a CPA firm or law firm).

weeks after the first wave and only sent to the respondents that completed the first wave. Thus, responses from both study waves are essential for testing the hypothesized relationships as this ensures data collection for all the posited variables.

Principal managers are the point of contact for each business to be surveyed, as this allows for capturing the data utilizing the key informant approach (Kumar, Stern, & Anderson, 1993). Thus, "principal manager" is synonymous with "business owner" for most businesses sampled. Data collection resulted in 400 usable responses for the pretest rounds[2] and 676 total usable responses for the main study[3], which exceeds the suggested minimum sample size of 200 for assessing validity (Comrey, 1988; Garver & Mentzer, 1999).

The pretest assessment was conducted on Prolific users and was only administered to individuals who indicated they were entrepreneurs, in which 400 respondents completed the surveys (200 respondents for Wave 1 Survey and 200 respondents for Wave 2 Survey). The measurement instrument for surveying participants of the pretest study consisted of 28 items for Wave 1 and 29 items for Wave 2, for a total of 57 items (55 scale items and 2 attention checks; see Table 1 and Appendix A).

The two waves of the main study were conducted by administering an online survey, via Qualtrics, in conjunction with the MS-SOS Corporations Report. Due to Prolific not providing any information for their users, additional questions were added to capture the control variables for Prolific respondents (see survey in Appendix A). The measurement instrument for surveying the potential respondents of the main study consists of 26 items for Wave 1: MS-SOS, 30 items for Wave 1: Prolific, 24 items for Wave 2: MS-SOS, and 24 items for Wave 2: Prolific. The two

[2] 200 for the Wave 1 Survey and 200 for the Wave 2 Survey. Entrepreneurs from the U.S. and U.K. completed the pretests for both waves of surveys via Prolific's platform at a rate of $1.75 per survey response.
[3] 72 responses from the MS-SOS list and 604 responses from U.S. entrepreneurs via Prolific's platform.

waves resulted in a total of 50 items for MS-SOS respondents (48 scale items and 2 attention checks) and 54 items for Prolific respondents (52 scale items and 2 attention checks; see Table 1). Responses from the MS-SOS list were paired with the corresponding business information from the MS-SOS Corporations Report for control items in the study. All data was password protected and encrypted to protect respondent information. Also, the USCO and USPTO databases were used to find any intellectual properties that may signal the focal firms' innovative efforts for post hoc testing. Due to the small size, many firms did not have intellectual property. However, the variable was still included as an additional measure of innovative behaviors.

While a low response rate was an issue in the MS-SOS mailout, which is common in family business research (Eddleston & Kellermanns, 2007), several techniques were implemented to increase the response rate. Following the successful survey methods detailed by Dillman (1978), the confidentiality standard the research operated under to reinforce client anonymity was clearly articulated. Additionally, clear instructions were provided to participants to complete the survey easily (Dillman, 1978). As another means to increase the response rate, each wave of the study had three rounds of survey mailouts (i.e., Round 1: initial mailout; Round 2: follow-up mailout, 2 weeks after initial; Round 3: follow-up mailout, 2 weeks after second round). The three rounds of survey mailout attempted to increase the response rate for each study wave. Thus, the timing of the second wave survey depended on the round in which the respondent completed the first wave survey. For example, suppose a respondent completed the first wave of the study in the first round. In that case, they completed the second wave measurement instrument while a respondent completed the first wave instrument in Round 3 of the mailout for the first wave instrument. Developing a detailed completion timeline and categorizing the survey responses ensured that time frames were in the correct order. Online

surveys allowed for a date of completion to be captured, which helped categorize which round the data was collected.

3.1.1 Identification of Family Firms

The samples collected from the MS-SOS and Prolific were sorted into two types of firms, family and nonfamily. This separation of firm types is an attempt to identify the family businesses in the United States and to assess the first hypothesis, which examines whether the effect of blending social capital on innovation is stronger in family firms versus nonfamily firms. Family firms were identified based on the principal manager's response to the items about family ownership, family management, family employment, and intentions for transgenerational control (Chrisman et al., 2012), which aligns with Chua, Chrisman, and Sharma's (1999) definition of a family firm. Thus, the firms need to have two or more family members involved in the firm, majority family ownership (i.e., 50% or greater in SMEs), and transgenerational intentions to be a family firm. The items measure the firm's percentage of family ownership, the percentage of nonfamily ownership, the number of family managers, the number of family employees, and the entrepreneur's intentions for maintaining family involvement and influence in the firm beyond the current generation, allowing for continuous and categorical variables for identifying and assessing family firms (see Table 3.1).

3.1.2 Independent Variable

The study contains one independent variable, blending social capital. Blending social capital arises from the social relationships with family stakeholders external to the family business, which includes the interaction of bonding and bridging social capital. Five items from the Family Social Capital scale created and validated by Chirico and Salvato (2016) were

adapted to assess bonding social capital. Bridging social capital was measured with 4 items adapted from Williams' (2006) Online Community Social Capital Scale and 3 items adopted and modified from Chang et al.'s (2009) External Support Scale. The slight modification of items occurs by substituting "external family members" for "people." Additionally, "my business" was substituted for "the new business" (Chang et al., 2009).

The scale items for assessing the bonding and bridging social capital interaction for blending social capital with family stakeholders were measured on a 5-point Likert-based scale with anchors of 1-Strongly disagree to 5-Strongly agree. Directions in the survey were added before this section to explain that the set of items is referencing family members that are not directly involved (i.e., performing daily tasks, performing managerial decisions, or ownership greater than 5%) in the family business. Thus, ensuring the answers capture the external relationships with family stakeholders.

To capture an interaction of bonding and bridging social capital was created by multiplying the summated values for bonding social capital and bridging social capital to assess blending social capital. Furthermore, including the summated values for bonding social capital and bridging social capital scales allowed for separately assessing the different potential combinations for developing blending social capital.

In accordance with social capital research (Stam, Arzlanian, & Elfring, 2014), network size was assessed as an alternative measure for the IV in post hoc testing. An additional question in the second wave of the study asked the respondents to give a number for external family stakeholders they are in contact with to capture the network size that facilitates blending social capital (i.e., external family stakeholders). The items for measuring blending social capital with family stakeholders are shown in Table 3.1.

3.1.3 Moderating Variables

The constructs of familial tie strength and external business ownership of external family stakeholders are in the research model based on the a priori expectations of their moderating roles on the main effects.

3.1.3.1 Familial Tie Strength

The 5 items measuring frequency, intimacy, and intensity of social tie strength assess the moderating effects of familial tie strength on the relationship between blending social capital with family stakeholders and family firm innovation efforts (Granovetter, 1973; Li, Wang, Huang, & Bia, 2013; Mathews et al., 1998). Four adapted and modified items from previously validated studies were included to capture the overall strength of social ties with external family stakeholders, with an additional item of intensity calculated based on the responses from 2 of the scale items (Li et al., 2013; Mathews et al., 1998). The 2 items from Li et al.'s (2013) validated Tie Strength scale are used to measure the intimacy and frequency of social ties with external family members and were modified by changing "network members" to "external family members." The item for accessing the intimacy of the social tie with external family members is measured using a 7-point Likert-based scale with anchors of 1-Very distant to 7-Very close. Likewise, the item for accessing the frequency of interaction with the external family stakeholders used a 7-point Likert-based scale with the anchors of 1- Once every 3 months or less (or never) to 7- daily.

Additionally, two open-response items adapted from Mathews et al. (1998) assessed the number of weekly contacts made and weekly hours spent with external family members. Individually, these 2 items represent the frequency of interactions with external family members; however, combining the two allowed for assessing the intensity of social ties with external

family members. An “intensity” variable was created by dividing the hours of interaction by the number of contacts with external family members. This value indicates “intensity” based on the notion that more time spent interacting with external family members represents a more intensive relationship than interactions with less time (Mathews et al., 1998). Lastly, the overall score for familial tie strength with external family members was accessed by summing the scores from the 5 measures, in which a higher score indicates a stronger tie with external family members (see Table 3.1).

3.1.3.2 External Family Stakeholder External Business Ownership

Similarly, to capture the proposed moderating effects of external business ownership of external family stakeholders on the hypothesized relationships, a continuous variable was created by collecting the number of external family members who own an external business (see Table 3.1).

3.1.4 Dependent Variable

The dependent variable for this study is innovation, which was measured by combining the opportunity exploitation and opportunity exploration scales. Thus, the dependent variable includes both opportunity exploitation and opportunity exploration to measure the extent of innovative behaviors. Using a similar approach as Zahra (2005) to capture the opportunity exploration dimension of innovation, the constructs included were investment in new technologies and investment in new product development. Investment in new technologies used 3 items measured on a 5-point Likert-based scale with anchors of 1-Little or no emphasis to 5-A great deal of emphasis. Investment in new product development is also measured using 3 items on a 5-point Likert-based scale with anchors of 1-Little or no emphasis to 5-A great deal of

emphasis. The 6 items were combined to test opportunity exploration. The exploitation scale from Lubatkin, Simsek, Ling, & Veiga (2006) was adapted to assess the opportunity exploitation dimension. The scale consists of 6 items that are measured using a 5-point Likert-based scale with anchors ranging from 1-Strongly disagree to 5-Strongly agree.

As an additional measure of innovation, the business names were searched in the USCO and USPTO databases for intellectual property registration. After the data was collected, a continuous variable was created for the DV by totaling all the database instances. Likewise, the measurement instrument in Kellermanns, Eddleston, Barnett, & Pearson (2008) captured an additional innovation variable for post hoc testing. The validated scale consists of 4 Likert-based items with anchor points of 1-Strongly disagree to 7- Strongly agree. See Table 3.1 for a list of the study's survey items for assessing innovation.

3.1.5 Control Variables

Control variables were identified that might also influence the innovative behaviors of family firms. These include firm age, firm sector, firm size, family firm bonding social capital, and bridging social capital with nonfamily members. In the MS-SOS sample, firm age and firm sector were collected by matching the business name responding to the survey with the business information in the MS-SOS Corporations Report. In contrast, firm size was captured by asking for the total number of employees. Due to the Prolific platform ensuring respondent anonymity, control variable questions were added to the survey (see Appendix A). Since the firm sector is a categorical variable, numbers for each category of the variable were assigned based on the North American Industry Classification System ordering, e.g., Agriculture was 1, Manufacturing was 5, Retail was 7, etc. The different sector types represented in the data collection determined the 19 variables used for the firm sector.

Capturing the effects of other aspects of the family firm's social capital resource, bonding social capital in the family firm and bridging social capital with nonfamily members were measured. The validated scale by Herrero (2018), adapted from Carr et al. (2011), was used to measure the bonding social capital of all members in the family firm. The 9 items of the adapted ISC-FB scale are measured on a 5-point Likert-based scale with anchors of 1-Strongly disagree to 5-Strongly agree. The 9 items consist of 3 items per dimension of bonding social capital (structural-strength and density of ties, relational-open communication and trust, & cognitive-shared meanings; Nahapiet & Ghoshal, 1998). Therefore, the bonding social capital of the family firm is a higher-order construct comprised of 3 lower-order, reflective constructs. The validated scale by Peng and Luo (2000) was adopted to measure the bridging social capital with nonfamily members. The scale from Peng and Luo (2000) consists of 6 items measured with a 7-point Likert-based scale ranging from 1-Very little to 7-Very extensive (see Table 3.1).

3.1.6 Instrumental Variables

Another potential bias in the study is endogeneity, which may appear when the DV causes the IV to occur (i.e., reverse causality) or when certain variables are not included in the hypothesized relationships (i.e., omitted variable bias). Instrumental variables were identified to limit the presence of endogeneity in the research model potentially. The purpose of the instrumental variables was to include variables that would correlate with the independent variable but not influence the dependent variable (Hamilton & Nickerson, 2003). Thus, the instrumental variables should correlate with blending social capital without directly influencing the innovation of the study's focal firms. Like Memili and colleagues (2015), the first instrumental variable was the percent change in the divorce rate per county in the U.S. The U.S. Census Bureau's ACS was used to collect the 2019 and 2020 divorce rates for the county

associated with the focal business to get this variable. The second variable included was the percent change in marriage rate for the focal firm's county, accessed from the U.S. Census Bureau's ACS 2019 and 2020 reports. The final instrumental variables collected were the percent change in average household size per county in the U.S. and the percent change in average family size per county in the U.S. from the U.S. Census Bureau's 2019 and 2020 ACS reports.

The change in the divorce rate, marriage rate, average household size, and average family size per county should indicate a change in the number of family members available for blending social capital development while not directly impacting the focal firms' innovativeness. Marriage rate, household size, and family size per county are presumed to have a direct relationship with blending social capital. On the other hand, the divorce rate should have an inverse relationship with blending social capital.

3.1.7 Attention Checks

Finally, 1 question was included in each wave as an attention check to further validate the surveys' responses. An instructed-response item was utilized, which asked respondents to select a specific response to the item to assess their attention to the survey instrument (Kung, Kwok, & Brown, 2018). The items used were adapted from Podsakoff et al.'s (1990) Organizational Citizen Behavior Scale (see Table 3.1). The first attention check item was placed approximately one-third of the way into the Wave 1 survey, and the second was inserted approximately three-fourths of the way into the Wave 2 survey. The responses were removed from the sample if respondents failed to correctly answer the attention check questions.

Table 3.1 Measurement Items

Items	Source of Scale
Wave 1	
Family Firm Identification	Adapted/Modified from Chrisman et al., 2012
- Please indicate the percentage of the business you own.	
- Please indicate the percentage of the business that other members of your family own.	
- Please indicate the percentage of the business that other individuals who are nonfamily own.	
- Please indicate the number of family members that are managers in the business.	
- Please indicate the number of family members that are employed in the business.	
- Do you wish/expect that the future successor as president of your business will be a family member? (Y/N)	
Blending Social Capital with External Family Stakeholders	
Bridging Social Capital Dimension	Adapted/Modified from Chang et al., 2009 & Morris, 2006
- I often discuss ideas about my business with external family members.	
- I talk about my business with external family members.	
- I try to get as much feedback on my business ideas from external family members as possible.	
- I ask external family members for advice on how to improve my business ideas.	
- I feel external family members influence my decisions for my business.	
- There are several external family members I trust to help solve my business problems.	
- If I needed an emergency loan of $500, I know I could turn to an external family member.◊	
Bonding Social Capital Dimension	Adapted from Chirico & Salvato, 2016
- Family members spend time together in social occasions.	
- Family members maintain close social relationships.	
- Family members can rely on each other without any fear that some of them will take advantage even if the opportunity arises.	
- Family members always keep the promises they make to each other. ◊	
- Family members share the same ambitions and vision. ◊	
Innovation-Robustness	Adopted from Kellermanns et al., 2008.
- Over the past three years, our firm has pioneered the development of breakthrough innovations in its industry.	
- Our firm has introduced many new products or services over the past three years.	
- Our firm has emphasized making major innovations in its products and services over the past three years.	
- Our firm has emphasized taking bold, wide-ranging actions in positioning itself and its products or services over the past three years.	
Familial Tie Strength	Adapted/Modified from Li et al., 2013
- How frequent you communicate with your external family members.	
- How close is your relationship with your external family members?	
- How many times do you have contact with an external family member in an average week?	Adapted/Modified from Mathews et al., 1998
- How many hours do you spend with an external family member in an average week?	
- Intensity of social tie with external family member (Hours / # of contacts).	

Table 3.1 Continued

Items	Source of Scale
External Business Ownership - How many of your external family members own a business?	Developed
Attention Check - For this question, please select number two to demonstrate your attention	Adapted from Podsakoff et al., 1990
Wave 2	
Blending Social Capital-Robustness - Please indicate the number of external family members that you have contact with. Please remember that external family members are family members that are neither employed in the business nor have greater than 5% ownership in the business.	Developed
Innovation Opportunity Exploitation Dimension To what extent has your company focused on the following activities over the past 5 years or since start-up? - Commits to improve quality and lower cost. - Continuously improves the reliability of its products and services. - Increases the levels of efficiency in its operations. - Constantly surveys existing customers' satisfaction. ◊ - Fine-tunes what it offers to keep its current customers satisfied. ◊ - Penetrates more deeply into its existing customer base. ◊	Adapted from Lubatkin et al., 2006
Opportunity Exploration Dimension Investment in New Technologies To what extent has your company focused on the following activities over the past 5 years or since start-up? - Acquiring new technologies developed by other firms. - Investing in developing emerging technologies. - Supporting experimental R&D on emerging new technologies. Investment in New Products To what extent has your company focused on the following activities over the past 5 years or since start-up? - Developing new products. - Introducing new products to the market. - Leading the industry in introducing breakthrough products to the market.	Adapted from Zahra, 2005
Control Variables - Start date of business (firm age) - NAICS Code of business (firm industry) - Number of employees (firm size)	MS-SoS Database/Prolific Survey
Bonding Social Capital Structural Dimension - Members who work in this business engage in honest communication with others. - Members who work in this business have no hidden agendas.	Adopted from Herrero, 2018

Table 3.1 Continued

Items	Source of Scale
- Members who work in this business willingly share information with others.	
Relational Dimension	
- Members who work in this business have confidence in others.	
- Overall, members who work in this business trust others.	
- Members who work in this firm are usually considerate of each other's feelings. ◊	
Cognitive Dimension	
- Members who work in this firm are committed to the goals of this firm.	
- There is a common purpose shared among members who work in this firm.	
- Members who work in this firm share the same vision for the future of this firm.	
Bridging Social Capital w/ nonfamily	Adapted from Peng & Luo, 2000
Please select the number best describing the extent to which you and the top managers at your firm have utilized personal ties, networks, and connections during the past three years with the following to improve the performance of your business.	
- Top managers at buyer firms.	
- Top managers at supplier firms.	
- Top managers at competitor firms. ◊	
- Political leaders in various levels of the government.	
- Officials in industrial bureaus.	
- Officials in regulatory and supporting organizations such as tax bureaus, state banks, commercial administration bureaus, and the like.	
Attention Check	Adapted from Podsakoff et al., 1990
- For this question, please select number four to demonstrate your attention	

◊ Denotes item was deleted in pretest stage of the study.

3.2 Analytical Methods

Due to the rewording of some scale items, conducting a pretest before administering the main study was necessary to ensure the reliability and validity of the measurement instruments.

3.2.1 Pretest of Measurement Instruments

Pretests were performed for both the Wave 1 Survey and Wave 2 Survey. Preliminary tests of the survey instruments were conducted by soliciting responses from Prolific. Survey participation was requested from individuals currently engaged in entrepreneurship or who have engaged in entrepreneurship. Both surveys received 200 usable responses for accurately validating the instruments (Garver & Mentzer, 1999).

An initial review of the data revealed 8 missing data points for the Wave 1 Survey and 7 missing data points for the Wave 2 Survey. The estimation method of linear interpolation was used to input the 15 missing data points in the responses for both surveys. This resulted in .143% of data replacement for the Wave 1 Survey and .121% of data replacement for the Wave 2 Survey, which falls well below the recommended threshold of 20% of data for transforming missing data (Collier, 2020; Hair et al., 2010).

Computing Cronbach's alpha allows for assessing the internal consistency of the measurement items, in which a value of ≥ .70 suggests acceptable reliability (Nunnally & Bernstein, 1994). The scale items for measuring the constructs of Wave 1 Survey have Cronbach's alphas that infer adequate reliability (i.e., Blending Social Capital Bridging - α =.923, Blending Social Capital Bonding - α =.863, & Innovation - α =.866)[4]. Similarly, the Wave 2 Survey items provide evidence of reliability when assessing Cronbach's alpha (i.e., Exploitation - α =.764, Exploration New Technologies - α =.836, Exploration New Products - α =.860, Bonding Social Capital Structural - α =.771; Bonding Social Capital Relational - α =.834, Bonding Social Capital Cognitive - α =.820, Bridging Social Capital Managers - α =.837, & Bridging Social Capital Officials - α =.889).

Because Family Firm Identification, Familial Tie Strength, External Business Ownership, and Blending Social Capital-robustness are observable measures, multicollinearity was assessed for the indicators of the indices as an initial test of reliability. The indices for Family Firm Identification are not very highly correlated (i.e., < .80; Field, 2014), with the highest correlation coefficient of -.561 providing an initial argument that multicollinearity may not be an issue with

[4] The reliabilities reported are for the updated constructs after completing item reduction via Confirmatory Factor Analysis.

this observable construct (see Table 3.2). As shown in Table 3.3, Familial Tie Strength Intensity does have a high correlation with Familial Tie Strength Question 2 (.780); however, this is not surprising since the response to Familial Tie Strength Question 2 is used to calculate Familial Tie Strength Intensity. The low correlations between the observable constructs for the Wave 1 Survey provide more reassurance against the presence of multicollinearity (see Table 3.4).

Table 3.2 Correlations of Family Firm Identification Indicators – Wave 1 Survey

	1	2	3	4	5	6
1. FF Q1	200					
2. FF Q2	-.561	200				
3. FF Q3	-.445	-.094	200			
4. FF Q4	-.249	.393	-.013	200		
5. FF Q5	-.327	.433	.084	.533	200	
6. FF Q6	-.170	.342	-.035	.152	.224	200

Note: Values on the diagonal are the sample size.

Table 3.3 Correlations of Familial Tie Strength Indicators – Wave 1 Survey

	1	2	3
1. FTS Q3	200		
2. FTS Q4	.330	200	
3. FTS Intensity	.026	.780	200

Note: Values on the diagonal are the sample size.

Table 3.4 Correlations of Observable Indices – Wave 1 Survey

	1	2	3
1. FFI	200		
2. FTS	.053	200	
3. EBO	.070	.001	200

Note: Values on the diagonal are sample size

An exploratory factor analysis (EFA), using principal component analysis with varimax rotation, is performed for an initial evaluation of the dimensionality of the measurement instruments.

3.2.1.1 Wave 1 Survey EFA - Pretest

In assessing the Wave 1 Survey, each construct is assessed separately before assessing them together. Two factors emerged when assessing Blending Social Capital with eigenvalues greater than 1, explaining 65.2% of the variance. The 2 factors emerging from Blending Social Capital are expected as Bonding Social Capital and Bridging Social Capital combine to measure Blending Social Capital. Question 7 cross-loads on the 2 factors, meaning it is a potential candidate for deletion; however, the item is included in the Confirmatory Factor Analysis (CFA) assessment to inform better the decision to delete the item from the survey instrument. Innovation and Familial Tie Strength resulted in 1 factor loading with eigenvalues greater than 1, explaining 71.5% and 86.1%, respectively.

After assessing the individual constructs, an EFA was conducted with all the items included. This EFA resulted in 4 factor loadings with eigenvalues greater than 1, explaining 71.6% of the variance. When combining all the variables into one EFA, cross-loading occurs for some items. While not surprising, Questions 1 and 2 for Familial Tie Strength cross-load with Blending Social Capital – Bonding items. The multiple cross-loadings may be explained by the items measuring family in the business; however, it is still alarming to have cross-loadings in the measurement instrument. Thus, a note has been made for these items and will be explored further in the CFA.

3.2.1.2 Wave 2 Survey EFA – Pretest

Following a similar approach as the EFA for the Wave 1 survey, an EFA was conducted on each Wave 2 Survey construct before compiling them to assess the entire measurement instrument. The items for Exploitation all loaded on a single factor, explaining 49.7% of the variance. Further assessing the Exploitation items shows that Question 6 has a lower factor loading of .581, which indicates this may be a problematic item in the survey. The items for Exploration loaded onto 2 factors, which explain 78.2% of the variance. This is expected since the items were broken into 2 dimensions by Zahra (2005), including Investment in New Technologies and Investment in New Products. The only alarming loading is Question 6, which cross-loads on the two factors. Thus, Exploration Question 6 may be a candidate for deletion from the scale. Two factors emerged when assessing the items for Bonding Social Capital, which explain 65.6% of the variance. The only cross-loading that occurs with Bonding Social Capital is Question 6, which may be a candidate for deletion. Bridging Social Capital results in 2 factors emerging and explaining 76.7% of the variance without cross-loading items. However, Question 3 of Bridging Social Capital has a low factor loading of .594, which means it may be a candidate for deletion in the CFA.

The EFA, including all survey items, resulted in 6 factors emerging, explaining 65.9% of the variance. A few cross-loadings occur when assessing the factor loadings with all variables included in the EFA. The first cross-loading that occurs is Question 1 of Exploitation and Question 2 of Bridging Social capital loading on one of the factors for Exploration (Questions 4-6). Likewise, Exploration Question 6 still cross-loads on both factors for the Exploration variable, and Bonding Social Capital Question 7 cross-loads on the 2 factors of the Bonding

Social Capital variable. Thus, these items resulting in cross-loadings are noted as potential candidates for deletion when running the CFA.

3.2.1.3 Wave 1 Survey CFA - Pretest

A confirmatory factor analysis (CFA) using structural equation modeling (SEM) with AMOS 28 following the two-step SEM approach outlined by Anderson and Gerbing (1988) is performed to validate the Wave 1 Survey further. Conducting the CFA highlights the importance of item reduction for moving forward with a valid Wave 1 Survey in the main study. Due to low factor loadings, items 7, 11, and 12 measuring Blending Social Capital are removed from the model. Thus, Wave 1 Survey now has 25 items, as shown in Appendix A. Likewise, items 1 and 2 measuring Blending Social Capital-Bridging are covaried based on the modification indices of the measurement model. After deleting the problematic items and including the one covariance, the measurement model provides evidence of good fit with the data from the following fit statistics: $\chi^2 = 135.659$, df = 83, $p < .001$, χ^2 / df = 1.634, normed fit index (NFI) = .935, relative fit index (RFI) = .917, incremental fit index (IFI) = .974, Tucker-Lewis Index (TLI) = .966, comparative fit index (CFI) = .973, root mean square error of approximation (RMSEA) = .056. Additionally, the factor loadings of the remaining items are above .70, aside from item 10 of Blending Social Capital-Bonding having a factor loading of .687 (see Table 3.5).

Conducting a CFA also aids in determining the convergent and discriminant validity of the measurement items (Garver & Mentzer, 1999; Hu & Bentler, 1999). Convergent and discriminant validity can be inferred by assessing each construct's average variance extracted (AVE) and the shared variance between constructs (Fornell & Larcker, 1981). Assessing convergent and discriminant validity resulted in all constructs having AVE exceeding the suggested .50 threshold and none of the shared variance between constructs exceeding the

average variance extracted for each construct. Reliability for the constructs can be further supported by calculating the composite reliability of each construct, which resulted in significant values (i.e., ≥.70; Garver & Mentzer, 1999). The correlations, composite reliability, and AVE for each construct are in Table 3.6.

Table 3.5 Reliability and Confirmatory Factor Analysis Wave 1 Survey - Pretest

Items	Standardized Factor Loadings	t Values
Blending Social Capital - Bridging (α = .923)		
- I often discuss ideas about my business with external family members.	.804	a
- I talk about my business with external family members.	.788	17.750
- I try to get as much feedback on my business ideas from external family members as possible.	.908	15.123
- I ask external family members for advice on how to improve my business ideas.	.870	14.282
- I feel external family members influence my decisions for my business.	.776	12.221
- There are several external family members I trust to help solve my business problems.	.725	11.179
Blending Social Capital – Bonding (α = .863)		
- Family members spend time together in social occasions.	.888	a
- Family members maintain close social relationships.	.913	16.239
- Family members can rely on each other without any fear that some of them will take advantage even if the opportunity arises.	.687	11.126
Innovation (α = .866)		
- Over the past three years, our firm has pioneered the development of breakthrough innovations in its industry.	.710	a
- Our firm has introduced many new products or services over the past three years.	.824	10.784
- Our firm has emphasized making major innovations in its products and services over the past three years.	.898	11.410
- Our firm has emphasized taking bold, wide-ranging actions in positioning itself and its products or services over the past three years.	.724	9.559
Familial Tie Strength (α = .833)		
- How frequent you communicate with your external family members.	.763	a
- How close is your relationship with your external family members?	.947	11.248

Note: Model fit statistic: χ^2 = 135.659, df = 83, p < .001, χ^2 / df = 1.634, normed fit index (NFI) = .935, relative fit index (RFI) = .917, incremental fit index (IFI) = .974, Tucker-Lewis Index (TLI) = .966, comparative fit index (CFI) = .973, root mean square error of approximation (RMSEA) = .056

All factor loadings have a p value of < .001.

[a]Denotes a constrained relationship to 1.00 for identification.

Table 3.6 Composite Reliability and Correlations of Constructs Wave 1 Survey - Pretest

	CR	1	2	3	4
1. Blending Social Capital – Bridging	.921	(.663)			
2. Blending Social Capital – Bonding	.872	.327	(.698)		
3. Innovation	.870	.390	.139	(.629)	
4. Familial Tie Strength	.849	.506	.576	.136	(.739)

Note: Values on Note: Values on the diagonal are the average variance extracted for each construct.

3.2.1.4 Wave 2 Survey CFA – Pretest

The same procedures for conducting a CFA using SEM with AMOS 28 in the Wave 1 Survey are implemented in the Wave 2 Survey to validate the measurement instrument further. Again, item removal from the model occurred due to low factor loadings. This item reduction results in items 4-6 measuring Exploitation, item 6 measuring Bonding Social Capital-Relational, and item 3 measuring Bridging Social Capital-Managers being removed from the model. This results in the Wave 2 Survey having 24 items, as shown in Appendix A. After removing the questionable items, the measurement model provides evidence of good fit with the data from the following fit statistics: Model fit statistic: χ^2 =287.112, df =181, $p < .001$, χ^2 / df =1.586, NFI =.886, RFI =.855, IFI =.955, TLI =.941, CFI =.954, and RMSEA =.054. Likewise, the factor loadings of the remaining items are above .70, aside from item 1 of Exploitation and item 6 of Exploration, having factor loadings of .660 and .694, respectively (see Table 3.7).

Convergent and discriminant validity are implied for the measurement model by all constructs having AVEs exceeding the suggested .50 threshold and none of the shared variances between constructs exceeding the average variance extracted for each construct (Fornell & Larker, 1981). The composite reliability of each construct is calculated for further support of

consistency, which resulted in significant values (i.e., ≥.70; Garver & Mentzer, 1999; see Table 3.8).

Table 3.7 Reliability and Confirmatory Factor Analysis Wave 2 Survey - Pretest

Items	Standardized Factor Loadings	t Values
Exploitation (α =.764)		
- Commits to improve quality and lower cost.	.660	a
- Continuously improves the reliability of its products and services.	.806	8.339
- Increases the levels of efficiency in its operations.	.731	8.064
Exploration-Technologies (α =.836)		
- Acquiring new technologies developed by other firms.	.717	a
- Investing in developing emerging technologies.	.868	10.805
- Supporting experimental R&D on emerging new technologies.	.806	10.354
Exploration-Products (α =.860)		
- Developing new products.	.907	a
- Introducing new products to the market.	.882	15.720
- Leading the industry in introducing breakthrough products to the market.	.694	11.294
Bonding-Structural (α =.771)		
- Members who work in this business engage in honest communication with others.	.763	a
- Members who work in this business have no hidden agendas.	.750	10.008
- Members who work in this business willingly share information with others.	.710	9.477
Bonding-Relational (α =.834)		
- Members who work in this business have confidence in others.	.854	a
- Overall, members who work in this business trust others.	.840	12.391
Bonding-Cognitive (α =.820)		
- Members who work in this firm are committed to the goals of this firm.	.703	a
- There is a common purpose shared among members who work in this firm.	.854	10.100
- Members who work in this firm share the same vision for the future of this firm.	.786	9.699
Bridging-Managers (α =.837)		
- Top managers at buyer firms.	.887	a
- Top managers at supplier firms.	.811	11.683
Bridging-Officials (α =.889)		
- Political leaders in various levels of the government.	.823	a
- Officials in industrial bureaus.	.907	14.584
- Officials in regulatory and supporting organizations such as tax bureaus, state banks, commercial administration bureaus, and the like.	.826	13.321

Note: Model fit statistic: χ^2 =287.112, df =181, p < .001, χ^2 / df =1.586, normed fit index (NFI) =.886, relative fit index (RFI) =.855, incremental fit index (IFI) =.955, Tucker-Lewis Index (TLI) =.941, comparative fit index (CFI) =.954, root mean square error of approximation (RMSEA) =.054.
All factor loadings have a p value of < .001.

[a]Denotes a constrained relationship to 1.00 for identification.

Table 3.8 Composite Reliability and Correlations of Constructs Wave 2 Survey - Pretest

	CR	1	2	3	4	5	6	7	8
1. Exploitation	.778	(.540)							
2. Exploration-Technologies	.841	.345	(.639)						
3. Exploration-Products	.870	.459	.531	(.694)					
4. Bonding-Structural	.785	.086	-.181	-.130	(.550)				
5. Bonding-Relational	.835	.081	-.107	-.057	.688	(.717)			
6. Bonding-Cognition	.826	.248	.075	.044	.492	.504	(.614)		
7. Bridging-Managers	.839	.365	.483	.493	-.057	.060	.165	(.723)	
8. Bridging-Officials	.889	.119	.428	.329	-.152	-.082	-.036	.510	(.727)

Note: Values on the diagonal are the average variance extracted for each construct.

3.2.2 Main Study Measurement Model

An initial review of the data reveals 51 missing data points for the Wave 1 Survey and 19 missing data points for the Wave 2 Survey. The estimation method of linear interpolation was used to input the 70 missing data points (i.e., .293 % of data, Wave 1 Survey & .122% of data, Wave 2 Survey), which is well below the suggested threshold of 20% of data for transforming missing data (Collier, 2020; Hair et al., 2010).

3.2.2.1 Measurement Invariance

Since the data was collected from two sources, Prolific and MS-SOS databases, a test for invariance between the two data groups was conducted. The initial assessment was to assess the configural invariance, in which a two-group analysis was performed on the Wave 1 Survey CFA, Wave 2 Survey CFA, and Theoretical Model CFA, with the groupings of Prolific data and MS-SOS data (Collier, 2020). The configural invariance test resulted in a good factor structure fit for both groups, with the unconstrained model fit producing the following fit statistics: Wave 1 CFA: χ^2 =261.634, df =122, $p < .001$, χ^2 / df =2.145, NFI =.953, RFI =.939, IFI =.974, TLI =.967, CFI =.974, and RMSEA =.041; Wave 2 CFA: χ^2 =662.896, df =360, $p < .001$, χ^2 / df =1.841, NFI =.919, RFI =.896, IFI =.961, TLI =.949, CFI =.961, and RMSEA =.035; and Theoretical Model CFA: χ^2 =1291.391, df =774, $p < .001$, χ^2 / df =1.668, NFI =.897, RFI =.876, IFI =.956, TLI =.946, CFI =.955, and RMSEA =.031. However, the metric invariance tests for Wave 2 Survey CFA and Theoretical Model CFA resulted in significant p-values (.019 and .005, respectively) for the $\Delta\chi^2$ test, which indicates that the meaning of the constructs may be different for each group of respondents in the Wave 2 Survey and the Theoretical Model. Due to this potential for variance between the respondent groups, the MS-SOS responses (n=72) were

removed from the analyses. The following assessments of descriptive statistics, reliability, EFA, CFA, and hypotheses testing were performed using the Prolific sample (n=604).

3.2.2.2 Descriptive Statistics

Table 3.9 displays the output of the descriptive statistics analysis, which includes the main model variables' means, standard deviations, and bivariate correlations. A quick assessment of the correlations between the main model variables displayed that multicollinearity may only be an issue between household size and family size variables with R = .777 (p-value <.001). Other alarming findings in the correlation matrix related to the low correlations between the Instrumental Variables (divorce rate, marriage rate, household size, and family size) and the Independent Variable (blending social capital) and the higher correlations between the Instruments and Dependent Variable (innovation), which are further discussed under endogeneity in the hypotheses section.

Table 3.9 Descriptive Statistics and Bivariate Correlations for Main Model Variables

Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. BLSC	233.601	97.573	1.000													
2. FFI	.273	.446	.146	1.000												
3. FTS	23.107	22.979	.358	.007	1.000											
4. EBO	1.473	3.869	.078	.108	-.024	1.000										
5. Sector	12.39	5.025	.039	-.115	-.006	.000	1.000									
6. Firm Age	9.125	12.929	-.053	.081	-.030	.003	-.084	1.000								
7. Firm Size	11.173	82.520	.120	.074	-.026	.138	-.010	.210	1.000							
8. Bonding SC	33.269	4.759	.119	.063	.067	.005	.012	.048	-.022	1.000						
9. Bridging SC	13.559	6.711	.139	.207	.016	.107	-.053	.072	.123	.011	1.000					
10. Divorce Rate	-.441	3.847	-.015	-.304	.025	.007	.057	.010	.009	-.020	-.099	1.000				
11. Marriage Rate	.081	1.626	.020	.091	-.004	.003	-.059	.061	.013	.036	.102	-.583	1.000			
12. Household Size	-.765	1.081	.054	.012	.023	.039	-.011	.028	.030	.042	.004	.069	-.322	1.000		
13. Family Size	-.551	1.407	.033	.019	.008	.025	.039	-.013	-.008	-.008	-.024	.193	-.522	.777	1.000	
14. Innovation	28.011	7.013	.177	.160	.047	.081	.006	.004	.101	.134	.473	-.108	.083	-.038	-.059	1.000

Note. n = 604 entrepreneurs. BLSC = Blending Social Capital. FFI = Family Firm Identification. FTS = Familial Tie Strength. EBO = External Business Ownership. Firm Size = # of employees. Coding of variables: FFI: 0 = Nonfamily Firm, 1 = Family Firm; Sector: 1 = Agriculture, 2 = Mining, 3 = Utilities, 4 = Construction, 5 = Manufacturing, 6 = Wholesale, 7 = Retail, 8 = Information, 10 = Finance/Insurance, 11 = Real Estate, 12 = Professional/Scientific, 13 = Management of Companies, 14 = Waste Management, 15 = Educational, 16 = Health Care, 17 = Arts & Entertainment, 18 = Accommodation/Food, 19 = Other services, 20 = Public Administration.

Correlations above |.081| are significant at .05 or lower for a two-tailed test. Correlations above |.108| are significant at .01 or lower for a two-tailed test.

3.2.2.3 Reliability

To ensure the reliability and validity of the main study measurement instruments, reliability assessments, EFA, and CFA analyses were conducted for the Wave 1 Survey, Wave 2 Survey, and Theoretical Model. Computing Cronbach's alpha allows for assessing the internal consistency of the measurement items, in which a value of ≥ .70 suggests acceptable reliability (Nunnally & Bernstein, 1994). The scale items for measuring the constructs of Wave 1 Survey have Cronbach's alphas that infer adequate reliability (i.e., Blending Social Capital Bridging - α =.916, Blending Social Capital Bonding - α =.808, & Innovation - α =.892). Likewise, the Wave 2 Survey items suggest evidence of reliability when assessing Cronbach's alpha (i.e., Exploitation - α =.705, Exploration New Technologies - α =.806, Exploration New Products - α =.861, Bonding Social Capital Structural - α =.800; Bonding Social Capital Relational - α =.845, Bonding Social Capital Cognitive - α =.842, Bridging Social Capital Managers - α =.821, & Bridging Social Capital Officials - α =.890).

Again, since Family Firm Identification, Familial Tie Strength, External Business Ownership, and Blending Social Capital-robustness are observable measures, multicollinearity is assessed for the indicators of the indices as an examination of reliability. The correlations between the observable indicators are not very high (i.e., < .80; Field, 2014), which gives initial assurance that multicollinearity may not be an issue with the observable constructs (see Tables 3.10 & 3.11). Likewise, the low correlations between the observable constructs provide an additional argument against multicollinearity (see Table 3.12).

Table 3.10 Correlations of Family Firm Identification Indicators Wave 1 Survey - Main

	1	2	3	4	5	6
1. FF Q1	604					
2. FF Q2	-.642**	604				
3. FF Q3	-.559**	-.046	604			
4. FF Q4	-.286**	.386**	-.011	604		
5. FF Q5	-.205**	.324**	-.004	.529**	604	
6. FF Q6	-.114**	.296**	-.151**	.186**	.224**	604

Note: Values on the diagonal are the sample size.
** Denotes significant correlation at .01 level.

Table 3.11 Correlations of Familial Tie Strength Indicators Wave 1 Survey - Main

	1	2	3
1. FTS Q3	604	604	
2. FTS Q4	.509**	.571**	
3. FTS Intensity	-.024	604	604

Note: Values on the diagonal are the sample size.
** Denotes significant correlation at .01 level.

Table 3.12 Correlations of Observable Indices Wave 1 Survey - Main

	1	2	3	4
1. FFI	604			
2. FTS	-.063	604		
3. EBO	.126**	-.029	604	
4. NetSize	.011	.029	.051	604

Note: Values on the diagonal are the sample size.
** Denotes significant correlation at .01 level.

Following the same steps for assessing dimensionality in the pretest, an EFA with principal component analysis and varimax rotation was performed on the measurement instruments of the main study.

3.2.2.4 Wave 1 Survey EFA – Main Study

In assessing the Wave 1 Survey, each construct is assessed separately before assessing them together. Two factors emerged when assessing Blending Social Capital with eigenvalues greater than 1, explaining 71.7% of the variance. The 2 factors emerging from Blending Social Capital are expected as Bonding Social Capital and Bridging Social Capital are combined to measure Blending Social Capital. Innovation resulted in 1 factor loading with eigenvalues greater than 1, explaining 75.7% of the variance. After the individual constructs were assessed, an EFA was conducted with all the items included. This EFA resulted in 3 factor loadings with eigenvalues greater than 1, explaining 73% of the variance without cross-loadings.

3.2.2.5 Wave 2 Survey EFA – Main Study

An EFA was conducted on the Wave 2 Survey instrument following the same approach as the previous EFAs. The items for Exploitation all loaded on a single factor, explaining 63.1% of the variance. The items for Exploration loaded onto 2 factors, which explain 76.6% of the variance. Again, the 2 factors are expected due to Zahra (2005) having Investment in New Technologies and Investment in New Products as separate factors. Two factors emerged when assessing the items for Bonding Social Capital, which explain 70.4% of the variance. However, it was expected that three factors would emerge, so a note was made that Bonding Social Capital may have issues in the CFA. Bridging Social Capital results in 1 factor emerging and explaining 63.9% of the variance without cross-loading items. Two factors were expected to emerge for Bridging Social Capital based on the pretests, which means this construct may cause issues in the CFA.

The EFA with all survey items resulted in 6 factors emerging, explaining 70.4% of the variance. Exploration Question 6 cross-loads on both factors for the Exploration variable when

assessing the factor loadings with all variables included in the EFA. Additionally, Bridging Social Capital results in a single factor, and Bonding Social Capital only loads onto 2 factors instead of the expected 3. Due to the factor loadings, a note is made for these items as potential concerns when running the CFA.

3.2.2.6 Common Method Bias

Due to common method bias being a concern in studies using survey instruments and cross-sectional data, recommendations of Podsakoff and colleagues (2003) were followed in the research design by implementing the 2-Wave approach. The 2-Wave approach captures the IV and DV in separate waves to mitigate the impact of common method bias. Likewise, Harman's Single Factor was calculated by constraining all the items to 1 construct in an EFA, which resulted in 14.9% of variance explained. Thus, Harman's Single Factor Analysis result of 14.9% is well below the recommended threshold of 50%, indicating that concern about common method bias is low (Fuller et al., 2016). Additionally, a Common Latent Factor analysis was performed on the Wave 1 Survey CFA, Wave 2 Survey CFA, and Theoretical Model CFA (Collier, 2020; Podsakoff et al., 2003). The Common Latent Factor analysis on the Wave 1 Survey resulted in a nonsignificant $\Delta\chi^2$test. The Wave 2 Survey CFA did result in a significant $\Delta\chi^2$test; however, the Theoretical Model CFA, including all variables, resulted in a nonsignificant $\Delta\chi^2$ test. Thus, the various assessments indicate that common method bias is probably not a significant concern for the data.

3.2.2.7 Wave 1 Survey CFA – Main Study

A CFA using SEM with AMOS 28 was performed to validate the Wave 1 Survey instrument. Items 1 and 2 measuring Blending Social Capital-Bridging are covaried based on the

modification indices of the measurement model. With the inclusion of the one covariance, the measurement model provides evidence of good fit from the following fit statistics: $\chi^2 = 157.447$, df = 61, $p < .001$, $\chi^2 / df = 2.581$, NFI = .968, RFI = .959, IFI = .980, TLI = .975, CFI = .980, and RMSEA = .051. Additionally, the factor loadings of the remaining items are above .70, aside from item 9 of Blending Social Capital-Bonding, having a factor loading of .618 (see Table 3.13).

Conducting a CFA also aids in determining the convergent and discriminant validity of the measurement items (Garver & Mentzer, 1999; Hu & Bentler, 1999). Convergent and discriminant validity analyses resulted in all constructs having AVE exceeding the suggested .50 threshold and none of the shared variance between constructs exceeding the average variance extracted (Fornell & Larcker, 1981). Reliability for the constructs can be further supported by calculating the composite reliability of each construct, which resulted in significant values (i.e., ≥.70; Garver & Mentzer, 1999). The correlations, composite reliability, and AVE for each construct are in Table 3.14.

Table 3.13 Reliability and Confirmatory Factor Analysis Wave 1 Survey - Main

Items	Standardized Factor Loadings	t Values
Blending Social Capital - Bridging (α = .916)		
- I often discuss ideas about my business with external family members.	.779	a
- I talk about my business with external family members.	.732	27.413
- I try to get as much feedback on my business ideas from external family members as possible.	.840	22.210
- I ask external family members for advice on how to improve my business ideas.	.874	23.296
- I feel external family members influence my decisions for my business.	.769	19.975
- There are several external family members I trust to help solve my business problems.	.784	20.423
Blending Social Capital – Bonding (α = .808)		
- Family members spend time together in social occasions.	.809	a
- Family members maintain close social relationships.	.915	19.630
- Family members can rely on each other without any fear that some of them will take advantage even if the opportunity arises.	.618	15.428
Innovation (α = .892)		
- Over the past three years, our firm has pioneered the development of breakthrough innovations in its industry.	.782	a
- Our firm has introduced many new products or services over the past three years.	.784	20.524
- Our firm has emphasized making major innovations in its products and services over the past three years.	.920	24.228
- Our firm has emphasized taking bold, wide-ranging actions in positioning itself and its products or services over the past three years.	.804	21.164

Note: Model fit statistic: $\chi^2 = 157.447$, df = 61, $p < .001$, χ^2 / df = 2.581, normed fit index (NFI) = .968, relative fit index (RFI) = .959, incremental fit index (IFI) = .980, Tucker-Lewis index (TLI) = .975, comparative fit index (CFI) = .980, root mean square error of approximation (RMSEA) = .051
All factor loadings have a p value of < .001.
[a]Denotes a constrained relationship to 1.00 for identification.

Table 3.14 Composite Reliability and Correlations of Constructs Wave 1 Survey - Main

	CR	1	2	3
1. Blending Social Capital – Bridging	.913	(.636)		
2. Blending Social Capital – Bonding	.830	.419	(.625)	
3. Innovation	.894	.235	.053	(.680)

Note: Values on the diagonal are the average variance extracted for each construct.

3.2.2.8 Wave 2 Survey CFA – Main Study

Conducting the CFA on the Wave 2 Survey indicated that items 1 and 3 measuring Exploitation should covary based on the modification indices of the measurement model. Allowing for the one covariance, the measurement model produces evidence of good fit with the data from the following fit statistics: χ^2 =408.919, df =180, $p < .001$, χ^2 / df =2.272, NFI =.941, RFI =.924, IFI =.966, TLI =.956, CFI =.966, and RMSEA =.046. Likewise, the factor loadings of the items are above .70, aside from item 2 of Exploitation and item 1 of Exploration having factor loadings of .643 and .641, respectively (see Table 3.15).

In assessing the AVEs of the measurement model, all constructs display convergent validity by exceeding the suggested .50 threshold, except for Exploitation, which has an AVE of .476. Likewise, all shared variances between constructs exceeded the AVEs for each of the constructs, except for Exploitation's AVE of .476, being below the squared correlation between Bonding-Structural and Bonding-Relational of .699 (Fornell & Larker, 1981). To further assess the discriminant validity of Exploitation, the Heterotrait-Monotrait Ratio (HTMTR) was assessed between Exploitation and the other constructs (Collier, 2020; Henseler, Ringle, & Sarstedt, 2015). The HTMTR values for Exploitation and the other constructs are below the threshold of .85, suggesting that discriminant validity is present for Exploitation (Kline, 2011; see Table 3.16). The composite reliabilities of each construct were higher than .70, which provides further evidence of consistency for the measurement instrument (Garver & Mentzer, 1999; see Table 3.17).

Table 3.15 Reliability and Confirmatory Factor Analysis Wave 2 Survey - Main

Items	Standardized Factor Loadings	t Values
Exploitation (α =.705)		
- Commits to improve quality and lower cost.	.717	a
- Continuously improves the reliability of its products and services.	.643	8.914
- Increases the levels of efficiency in its operations.	.707	11.741
Exploration-Technologies (α =.806)		
- Acquiring new technologies developed by other firms.	.641	a
- Investing in developing emerging technologies.	.838	15.622
- Supporting experimental R&D on emerging new technologies.	.820	15.511
Exploration-Products (α =.861)		
- Developing new products.	.856	a
- Introducing new products to the market.	.900	24.849
- Leading the industry in introducing breakthrough products to the market.	.726	19.920
Bonding-Structural (α =.800)		
- Members who work in this business engage in honest communication with others.	.744	a
- Members who work in this business have no hidden agendas.	.741	17.221
- Members who work in this business willingly share information with others.	.798	18.462
Bonding-Relational (α =.845)		
- Members who work in this business have confidence in others.	.867	a
- Overall, members who work in this business trust others.	.844	22.608
Bonding-Cognitive (α =.842)		
- Members who work in this firm are committed to the goals of this firm.	.835	a
- There is a common purpose shared among members who work in this firm.	.846	21.771
- Members who work in this firm share the same vision for the future of this firm.	.731	18.866
Bridging-Managers (α =.821)		
- Top managers at buyer firms.	.762	a
- Top managers at supplier firms.	.914	16.659
Bridging-Officials (α =.890)		
- Political leaders in various levels of the government.	.847	a
- Officials in industrial bureaus.	.897	26.236
- Officials in regulatory and supporting organizations such as tax bureaus, state banks, commercial administration bureaus, and the like.	.822	23.851

Note: Model fit statistic: χ^2 =408.919, df =180, p < .001, χ^2 / df =2.272, normed fit index (NFI) =.941, relative fit index (RFI) =.924, incremental fit index (IFI) =.966, Tucker-Lewis Index (TLI) =.956, comparative fit index (CFI) =.966, root mean square error of approximation (RMSEA) =.046.
All factor loadings have a p value of < .001.
[a]Denotes a constrained relationship to 1.00 for identification.

Table 3.16 Heterotrait-Monotrait Ratio of Correlations for Exploitation

	Exploitation
1. Exploration-Technologies	.435
2. Exploration-Products	.398
3. Bonding-Structural	.259
4. Bonding-Relational	.195
5. Bonding-Cognition	.315
6. Bridging-Managers	.407
7. Bridging-Officials	.247
8. Blending-Bridging	.208
9. Blending-Bonding	.204

Table 3.17 Composite Reliability and Correlations of Constructs Wave 2 Survey - Main

	CR	1	2	3	4	5	6	7	8
1. Exploitation	.731	(.476)							
2. Exploration-Technologies	.813	.328**	(.595)						
3. Exploration-Products	.869	.312**	.523**	(.690)					
4. Bonding-Structural	.805	.190**	.043	.029	(.580)				
5. Bonding-Relational	.845	.151**	.103*	.052	.699**	(.733)			
6. Bonding-Cognition	.847	.240**	.053	.059	.556**	.503**	(.649)		
7. Bridging-Managers	.828	.312**	.410**	.356**	.031	.043	.060	(.708)	
8. Bridging-Officials	.891	.199**	.389**	.261**	-.027	.016	-.036	.513**	(.733)

Note: Values on the diagonal are the average variance extracted for each construct.
* Denotes significant correlation at .05 level.
** Denotes significant correlation at .01 level.

3.2.2.9 Theoretical Model CFA – Main Study

The last CFA analysis conducted was on the theoretical model to ensure that combining the measurement instruments was valid. The CFA analysis on the theoretical model resulted in good model fit with the following fit statistics: χ^2 =708.003, df =387, p < .001, χ^2 / df =1.892, NFI =.933, RFI =.920, IFI =.968, TLI =.962, CFI =.968, and RMSEA =.037. As with the CFAs for each wave, all factor loadings are above .70 except for item 9 of Blending Social Capital-Bonding, item 2 of Exploitation, and item 1 of Exploration, having factor loadings of .618, .643, and .641, respectively (see Table 3.18).

The AVEs of the theoretical measurement model are similar to the AVEs in each wave CFA, with all constructs displaying convergent validity by exceeding the suggested .50 threshold, except for Exploitation, which has an AVE of .476. Similarly, all shared variances between constructs exceeded the AVE for each of the constructs, except for, Exploitation's AVE of .476 being below the squared correlation between Bonding-Structural and Bonding-Relational of .699 (Fornell & Larker, 1981). The composite reliability of each construct again resulted in significant values (i.e., ≥.70; Garver & Mentzer, 1999; see Table 3.19).

Table 3.18 Reliability and Confirmatory Factor Analysis – Theoretical Model

Items	Standardized Factor Loadings	t Values
Blending Social Capital - Bridging (α = .916)		
- I often discuss ideas about my business with external family members.	.777	a
- I talk about my business with external family members.	.730	27.346
- I try to get as much feedback on my business ideas from external family members as possible.	.838	22.066
- I ask external family members for advice on how to improve my business ideas.	.876	23.228
- I feel external family members influence my decisions for my business.	.771	19.967
- There are several external family members I trust to help solve my business problems.	.785	20.390
Blending Social Capital – Bonding (α = .808)		
- Family members spend time together in social occasions.	.805	a
- Family members maintain close social relationships.	.919	19.964
- Family members can rely on each other without any fear that some of them will take advantage even if the opportunity arises.	.618	15.442
Exploitation (α =.705)		
- Commits to improve quality and lower cost.	.721	a
- Continuously improves the reliability of its products and services.	.643	9.230
- Increases the levels of efficiency in its operations.	.701	11.828
Exploration-Technologies (α =.806)		
- Acquiring new technologies developed by other firms.	.641	a
- Investing in developing emerging technologies.	.838	15.619
- Supporting experimental R&D on emerging new technologies.	.820	15.510
Exploration-Products (α =.861)		
- Developing new products.	.857	a
- Introducing new products to the market.	.900	24.945
- Leading the industry in introducing breakthrough products to the market.	.726	19.920
Bonding-Structural (α =.800)		
- Members who work in this business engage in honest communication with others.	.745	a
- Members who work in this business have no hidden agendas.	.741	17.266
- Members who work in this business willingly share information with others.	.797	18.497
Bonding-Relational (α =.845)		
- Members who work in this business have confidence in others.	.867	a
- Overall, members who work in this business trust others.	.845	22.728
Bonding-Cognitive (α =.842)		
- Members who work in this firm are committed to the goals of this firm.	.834	a
- There is a common purpose shared among members who work in this firm.	.846	21.812
- Members who work in this firm share the same vision for the future of this firm.	.731	18.880
Bridging-Managers (α =.821)		
- Top managers at buyer firms.	.764	a
- Top managers at supplier firms.	.911	16.801
Bridging-Officials (α =.890)		
- Political leaders in various levels of the government.	.848	a
- Officials in industrial bureaus.	.896	26.257
- Officials in regulatory and supporting organizations such as tax bureaus, state banks, commercial administration bureaus, and the like.	.822	23.866

Note: Model fit statistic: χ^2 =708.033, df =387, p < .001, χ^2 / df =1.829, normed fit index (NFI) =.933, relative fit index (RFI) =.920, incremental fit index (IFI) =.968, Tucker-Lewis Index (TLI) =.962, comparative fit index (CFI) =.968, root mean square error of approximation (RMSEA) =.037.

All factor loadings have a p value of < .001.

[a]Denotes a constrained relationship to 1.00 for identification.

Table 3.19 Composite Reliability and Correlations of Constructs – Theoretical Model

	CR	1	2	3	4	5	6	7	8	9	10
1. Blending SC-Bridging	.913	(.636)									
2. Blending SC-Bonding	.830	.419**	(.625)								
3. Exploitation	.730	.170**	.153**	(.476)							
4. Exploration-Technologies	.813	.147**	.048	.328**	(.595)						
5. Exploration-Products	.869	.159**	.001	.312**	.523**	(.690)					
6. Bonding-Structural	.805	.011	.098*	.190**	.043	.029	(.580)				
7. Bonding-Relational	.846	.090*	.147**	.151**	.103*	.052	.699**	(.733)			
8. Bonding-Cognition	.846	.068	.157**	.240**	.053	.059	.556**	.503**	(.649)		
9. Bridging-Managers	.827	.143**	.110**	.312**	.410**	.356**	.031	.043	.060	(.707)	
10. Bridging-Officials	.891	.143**	.039	.199**	.389**	.261**	-.027	.016	-.036	.513**	(.733)

Note: Values on the diagonal are the average variance extracted for each construct.
* Denotes significant correlation at .05 level.
** Denotes significant correlation at .01 level.

CHAPTER IV

RESULTS

4.1 Hypotheses Analyses

In assessing the hypothesized relationships of the theoretical model, analyses were conducted using Hierarchical Regression via IBM SPSS 28 and the Hayes, 2021 Process Macro version 4 for the moderation assessments. The variables used for the main analyses included blending social capital as an interaction between bonding and bridging social capital with external family stakeholders, innovation measuring exploitation and exploration, and firms meeting all three criteria as a family firm (i.e., 2 or more family members in the firm, majority family ownership, and transgenerational intentions). The additional variables were included in the post hoc models in the section following the assessments of the main study models.

4.1.1 Hypothesis 1

A moderation analysis was performed with family firm identification as the moderating variable to assess the extent of blending social capital's influence on the innovation of family firms versus nonfamily firms (see Figure 4.1, Model 1). This classification resulted in 165 family firms and 436 nonfamily firms. Model 1 in the Process Macro, version 4 (Hayes, 2021), was used in IBM SPSS 28 to conduct the moderation analysis. The interaction between blending social capital and family firm identification was not significant (β = -.020, p-value = .602), indicating that the influence of blending social capital on innovation is not significantly different for family firms or nonfamily firms. Thus, Hypothesis 1 was not supported. However, the

assessment showed that the main effect of blending social capital positively influences innovation for both types of firms (β =.084, p-value = .023). Likewise, the control variables of bonding social capital (β =.118, p-value = .001) and bridging social capital (β =.448, p-value = .000) have a positive impact on innovation, as shown in Table 4.1.

Model 1: Family Firm Indicator Moderation

$$Innovation_i = b_0 + b_1sector_i + b_2firmage_i + b_3firmsize_i + b_4bondsc_i + b_5bridgsc_i + b_6blsc_i + b_7ffi_i + b_8blsc_i\_X\_ffi_i + \varepsilon_i$$

Model 2: Control Variables

$$Innovation_i = b_0 + b_1sector_i + b_2firmage_i + b_3firmsize_i + b_4bondsc_i + b_5bridgsc_i + \varepsilon_i$$

Model 3: Hierarchical Regression, Blending Social Capital IV

$$Innovation_i = b_0 + b_1sector_i + b_2firmage_i + b_3firmsize_i + b_4bondsc_i + b_5bridgsc_i + b_6blsc_i$$

Model 4: Familial Tie Strength Moderation

$$Innovation_i = b_0 + b_1sector_i + b_2firmage_i + b_3firmsize_i + b_4bondsc_i + b_5bridgsc_i + b_6blsc_i + b_7fts_i + b_8blsc_i\_X\_fts_i + \varepsilon_i$$

Model 5: External Business Ownership Moderation

$$Innovation_i = b_0 + b_1sector_i + b_2firmage_i + b_3firmsize_i + b_4bondsc_i + b_5bridgsc_i + b_6blsc_i + b_7ebo_i + b_8blsc_i\_X\_ebo_i + \varepsilon_i$$

Figure 4.1 Regression Models

Table 4.1 Blending Social Capital Influence on Firm Innovation

	H1			H2		H3	H4
Variable	1	2	3	4	5	6	7
Blending SC		.084*	.147		.059	.081	.065
Family Firm ID		.054					
Blending X Family Firm		-.020					
Familial Tie Strength						-.063	
Blending X FTS						-.001	
External Bus. Ownership							.023
Blending X EBO							.053
Controls							
Firm Sector	.026	.029		.027	.018	.013	.022
Firm Age	-.046	-.041		.079	.084	.086	.088
Firm Size	.056	.046		.063	.050	.044	.025
Bonding SC	.131***	.118**		.197**	.190**	.193**	.191**
Bridging SC	.469***	.448***		.491***	.487***	.483***	.486***
Constant	14.645	13.709	27.048	11.437	10.856	11.978	11.912
N	604	604	165	165	165	165	165
R^2	.245	.256	.022	.308	.311	.315	.313
F	38.835***	25.554***	3.606	14.146***	11.890***	8.954***	8.863***
ΔR^2		.000			.003	.000	.001
Δ F		.272			.727	.000	.323

* Denotes significance at .05 level.
** Denotes significance at .01 level.
*** Denotes significance at .001 level.

4.1.2 Hypothesis 2

Hierarchical regression was used via IBM SPSS 28 to assess Hypothesis 2, in which blending social capital is argued to influence family firms' innovation positively. The first model included the control variables of firm sector, firm age, firm size, bonding social capital, bridging social capital, and innovation (DV; see Figure 4.1, Model 2). Then blending social capital (IV) was included with the control variables and innovation (see Figure 4.1, Model 3). The model with the control variables was significant, with the variables of bonding social capital (β =.197, p-value =.003) and bridging social capital (β =.491, p-value <.001) positively influencing the innovation of family firms. However, as shown in Table 4.1, the relationship between blending

social capital and innovation is not significant (β = .059, p-value = .395), which means Hypothesis 2 is not supported for firms meeting all three criteria as a family firm.

4.1.3 Hypothesis 3

A moderation analysis using Model 1 of the Process Macro v4 and SPSS 28 was performed to examine the hypothesized positive interaction effect of familial tie strength on the relationship between blending social capital and innovation (see Figure 4.1, Model 4). The interaction between blending social capital and familial tie strength was not significant (β = -.001, p-value = .991), which indicates that the strength of the familial tie does not significantly impact the influence of blending social capital on innovation, thus not supporting Hypothesis 3. Likewise, the main effect of blending social capital on innovation was also not significant (β =.081, p-value = .291). However, as shown in Table 4.1, bonding social capital (β =.193, p-value = .005) and bridging social capital (β =.483, p-value = .000) positively impacted innovation.

4.1.4 Hypothesis 4

Moderated regression was performed, again using Model 1 with the Process Macro v4 in SPSS 28, to assess the argued positive influence of family stakeholders' external business ownership on the relationship between blending social capital and innovation in family firms (see Figure 4.1, Model 5). As shown in Table 4.1, Hypothesis 4 is not supported because the interaction effect was not significant (β =.053, p-value = .571). The main effect between blending social capital and innovation was also not significant (β =.065, p-value =.358). As with the previous moderated regression analyses, bonding social capital (β =.191, p-value =.005) and bridging social capital (β =.486 (p-value = .000) had significant relationships with innovation.

4.1.5 Endogeneity

Another potential issue that needs consideration in the research model is the presence of endogeneity occurring from reverse causality or omitted variable bias. Due to the study using family business resources as an independent variable to explain potential heterogeneity among family firms, the need for endogeneity testing is apparent (Zhang, Fang, Dou, & Chrisman, 2022). The potential sources of endogeneity may stem from measurement errors due to manipulated answers by respondents intentionally downplaying the "family" aspect of the firm because of perceived stigmas associated with this firm type, simultaneous causality caused by business affecting the family, and omitted variables in the model (Zhang et al., 2022). Four instrumental variables were collected to control for endogeneity issues based on the a priori expectations that they would influence the amount of blending social capital available to the family firm without directly influencing its innovation. As an approach to mitigate potential common method bias, the instrumental variables were collected from the U.S. Census Bureau's American Community Survey database. The instrumental variables include the percent change in the divorce rate, marriage rate, household size, and family size for the county of the focal business.[5] However, the correlations of the main study variables indicated that the four variables are weak instruments as they weakly correlate with innovation (DV) and do not correlate with blending social capital (IV; see Table 3.9). The low correlation between the instruments and IV indicated that the instrumental variables would not adequately control the potential reverse causality issue.

[5] For respondents that only provided the state and not the city, the percent change for the state was used, which resulted in 8 responses. Likewise, the U.S. percent change was used for 4 respondents that did not provide their location information.

The propensity score matching method was used to control the selection bias portion of endogeneity in the data since the instrumental variables are weak instruments (Guo & Fraser, 2014). The grouping variable used for propensity score matching (PSM) for H1 was family firm identification (nonfamily firms = 439, family firms = 165) with a tolerance of .01 without replacement. PSM was performed in SPSS 28 using logistic regression analysis to estimate the probabilities of the firm type being a family firm on the function of blending social capital, firm sector, firm age, firm size, firm bonding social capital, and firm bridging social capital. The PSM yielded 156 propensity score matches for nonfamily and family firms (see Table 4.2). The mean difference assessment in Table 4.2 indicates that the PSM method controls for the difference between the variables in family firms and nonfamily firms; however, the regression using the matched dataset also results in the influence of blending social capital on innovation being not significant (see Table 4.3). Worth noting is the presence of a significant relationship between bonding social capital and innovation for family firms and the absence of this relationship for nonfamily firms.

Table 4.2 Mean Difference Test between Family and Nonfamily Firms

	Entire sample			Matched Sample		
Variable	Family firms	Nonfamily firms	t-value	Treatment	Control	t-value
Innovation	29.839	27.324	-3.977***	29.276	28.942	-.436
Blending SC	256.739	224.904	-3.608***	250.372	252.449	.210
Firm Sector	11.45	12.74	2.842**	11.63	11.87	.418
Firm Age	10.833	8.483	-1.996*	10.588	10.093	-.308
Firm Size	21.164	7.418	-1.302	9.141	7.894	-.292
Bonding SC	33.755	33.087	-1.579	33.548	33.670	.237
Bridging SC	15.824	12.707	-5.195***	15.026	15.087	.085
Number of observations	165	439		156	156	

* Denotes significance at .05 level.
** Denotes significance at .01 level.
*** Denotes significance at .001 level.

Table 4.3 Blending Social Capital Influence on Firm Innovation with PSM

	Matched Sample		Treatment Group		Control Group	
Variable	Coef	t-value	Coef	t-value	Coef	t-value
Blending SC	.040	.759	.035	.455	.044	.584
Firm Sector	.023	.442	.043	.570	.020	.268
Firm Age	.032	.523	.093	1.147	-.018	-.188
Firm Size	.005	.083	.030	.371	-.008	-.082
Bonding SC	.160**	3.118	.197**	2.705	.127	1.708
Bridging SC	.431***	8.376	.431***	5.834	.447***	6.030
Number of observations	312		156		156	

** Denotes significance at .01 level.
*** Denotes significance at .001 level.

The first step of the PSM method for H2-H4 included creating a dichotomous variable from the continuous variable of blending social capital, in which the mean value of 256.739 was used as a cutoff point to determine levels of high blending social capital (> 256.739; n=83) and low blending social capital (< 256.739; n=82). PSM with a tolerance of .01 without replacement was performed in SPSS 28 using the blending social capital dichotomous variable as the grouping variable. The PSM assessment used logistic regression to estimate the probabilities of high blending social capital occurring based on the function of family firm identification, external business ownership, familial tie strength, firm sector, firm age, firm size, firm bonding social capital, and firm bridging social capital. The PSM resulted in 40 propensity score matches for low and high blending social capital groups (see Table 4.4). The mean difference tests display the PSM method controls for the difference between the variables in the control group (low blending social capital) and treatment group (high blending social capital). Again, the regression analyses with the matched dataset did not yield significant interaction effects for familial tie strength and family stakeholder external business ownership on the influence of blending social capital on innovation (see Table 4.5). Familial tie strength had a negative impact on innovation for the family firms with low blending social capital while bridging social capital

positively influenced innovation for all family firms with both low and high levels of blending social capital.

Table 4.4 Mean Difference Test between Low BLSC and High BLSC

	Entire sample			Matched Sample		
Variable	High BLSC	Low BLSC	t-value	Treatment	Control	t-value
Innovation	30.548	29.122	-1.352	30.000	28.850	-.766
Familial Tie Strength	29.410	17.258	-3.167**	21.089	19.610	-.512
External Bus. Ownership	2.373	1.927	-.498	1.625	1.250	-.819
Firm Sector	12.42	10.46	-2.423*	11.25	11.75	.442
Firm Age	10.169	11.506	.672	9.769	9.963	.066
Firm Size	37.169	4.963	-1.589	3.875	5.325	1.151
Bonding SC	34.398	33.104	-1.836	34.025	33.150	-.846
Bridging SC	15.928	15.720	-.191	15.025	14.825	-.136
Number of observations	83	82		40	40	

* Denotes significance at .05 level.
** Denotes significance at .01 level.

Table 4.5 Blending Social Capital Influence on Family Firm Innovation with PSM

	Matched Sample		Interactions		Treatment Group		Control Group	
Variable	Coef	t-value	Coef	t-value	Coef	t-value	Coef	t-value
Blending SC	.154	1.460	.165	1.421	.308	1.945	.124	.730
Familial Tie Strength	-.139	-1.324	-.203	-.897	-.314*	-2.062	-.038	-.216
External Bus. Ownership	-.100	-.939	-.234	-.762	.071	.453	-.125	-.762
BSC X FTS			.227	.869				
BSC X EBO			.227	.620				
Firm Sector	-.014	-.130	-.038	-.323	-.272	-1.739	.091	.517
Firm Age	.097	.912	.094	.901	.291	1.827	.005	.030
Firm Size	.105	.979	2.498	1.003	.106	.730	.102	.539
Bonding SC	.179	1.727	.156	1.504	.370*	2.535	.094	.573
Bridging SC	.349**	3.247	.345**	2.952	.328*	2.242	.379*	2.043
Number of observations	80		80		40		40	

* Denotes significance at .05 level.
** Denotes significance at .01 level.

4.2 Post hoc Analyses

To fully assess the relationships posited, alternative models were performed with additional variables collected in the study. These additional variables included the family firm composite (FFC) for family firm identification (H1 only), familial tie strength intensity (FTSI; Hypothesis 3 only), the alternative innovation measure adapted from Kellermanns et al., 2008 (innovation alt.), and the number of intellectual properties (# of IPs) as a measure of innovation. The alternative measure to assess blending social capital was network size (i.e., number of external family stakeholders; H1 & H2). As shown in Table 4.6, the additional assessments yielded 4 significant relationships.

Table 4.6 Significant Post hoc Models

Hypothesis	Model #	Model	IV	DV	Interaction
H1	7	Innovationalti = b0 + b1sectori + b2firmagei + b3firmsizei + b4bondsci + b5bridgsci + b6netsizei + b7ffci + b8netsizei_X_ffci + εi	Network Size	Innovation Alt.	Network Size X Family Firm Composite
H1	8	#ofIPsi = b0 + b1sectori + b2firmagei + b3firmsizei + b4bondsci + b5bridgsci + b6blendingsci + b7ffii + b8blendingsci_X_ffii + εi	Blending SC	# of IPs	Blending SC X Family Firm ID
H2	5	#ofIPs i = b0 + b1sectori + b2firmagei + b3firmsizei + b4bondsci + b5bridgsci + b6blendingsci + εi	Blending SC	# of IPs	-----
H3	1	Innovationi = b0 + b1sectori + b2firmagei + b3firmsizei + b4bondsci + b5bridgsci + b6blendingsci + b7ffci + b8blendingsc_X_ftsii + εi	Blending SC	Innovation	Blending SC X FTS Intensity

4.2.1 Hypothesis 1 – Post hoc

To further assess the extent of the relationship between blending social capital and innovation for family firms versus nonfamily firms, alternative models were performed with the additional measures of family firm identification (FFC: the composite of all family firm measures), blending social capital (network size: the size of the network with external family stakeholders), and innovation (innovation alt.: 4-item innovation measure, # of IPs: number of intellectual properties registered by firm). The alternative model assessments for Hypothesis 1 resulted in 11 additional models performed. As shown in Table 4.7, the odd-numbered models included FFC as the variable for family firm identification, while the even-numbered models used FFI. Additionally, Models 4-7 used innovation alt. as the DV, with Models 6 & 7 also replacing blending social capital with network size. Models 8-11 included # of IPs as the DV, with Models 10 & 11 using network size as the IV.

The first alternative model (Model 1) resulted in a positive main effect between blending social capital and innovation (β =.089, p-value = .015); however, the interaction between FFC and blending social capital was not significant. Blending social capital (β =.109, p-value = .004) and FFI (β =.082, p-value = .034) impact innovation positively when using innovation alt. as the DV in Model 4 but do not yield a significant moderating effect. Network size and FFC (β =.190, p-value = .032) positively moderate innovation alt. in Model 7. When assessing the simple slopes of the interaction between network size and FFC on the impact of innovation, it appears there are differences in the slopes. However, the main effects are not significant at the – 1 standard deviation (SD), average, and + 1 SD with p-values of .761, .997, & .225, respectively. The Johnson-Neyman points indicated values of FFC $\leq$ -4.521 below the mean and $\geq$ 1.255 above the mean result in significant influences of network size on innovation, which is reflected in the

graph of slopes in Figure 4.2. Blending social capital and FFI (β =.092, p-value = .029) yield a positive moderation effect on the # of IPs in Model 8. Assessing the simple slopes of the interaction between and blending social capital and FFI on the impact of # of IPs in Figure 5, the slope of blending social capital for nonfamily firms (p-value .768) is not significant. However, the slope of blending social capital is significant for family firms (p-value=.008), which is reflected in the graph of slopes in Figure 4.3.

Table 4.7 Alternative Models for Hypothesis 1

	Innovation			Innovation Alt.				# of IPs			
Variable	1	2	3	4	5	6	7	8	9	10	11
Blending SC	.089*			.109**	.120**			.070	.061		
Network Size		.003	.011			.018	.020			-.000	.004
Family Firm ID		.060		.082*		.091*		.015		.037	
Blending X FFI				-.027				.092*			
Network X FFI		.032				-.017				.015	
Family Firm Comp	.043		.060		.007		.058		.060		.058
Blending X FFC	.018				.026				.064		
Network X FFC			.051				.190*				-.004
Controls											
Firm Sector	.023	.036	.029	.083*	.070	.086*	.078*	-.076	-.078	-.065	-.067
Firm Age	-.033	-.046	-.040	-.018	-.013	-.027	-.025	.162***	.163***	.153***	.162***
Firm Size	.051	.052	.058	.114**	.113**	.123**	.114**	.131**	.155***	.152***	.161***
Bonding SC	.117**	.127***	.128***	-.002	.001	.010	.017	-.002	-.003	.007	.004
Bridging SC	.452***	.457***	.462***	.370***	.382***	.382***	.391***	-.017	-.020	-.011	-.010
Constant	15.578	14.606	14.833	7.027	7.144	6.530	6.555	.140	.166	.069	.095
R^2	.255	.250	.248	.209	.203	.197	.196	.077	.075	.066	.068
F	25.450***	24.766***	24.504***	19.660***	18.995***	18.295***	18.116***	6.166***	5.999***	5.237***	5.387***
ΔR^2	.000	.001	.000	.001	.001	.000	.006	.007	.004	.000	.000
Δ F	.215	.908	.355	.486	.411	.229	4.629*	4.791*	2.245	.151	.001

Note. N=604. FFI= Family Firm Identification. FFC=Family Firm Composite.
* Denotes significance at .05 level.
** Denotes significance at .01 level.
*** Denotes significance at .001 level.

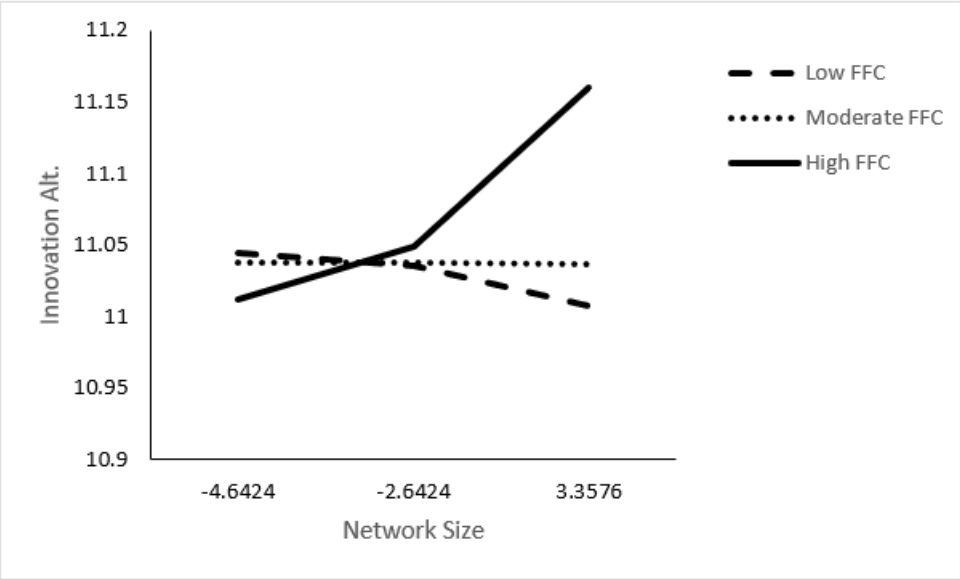

Figure 4.2 Hypothesis 1 Alternative Model 7 Simple Slopes

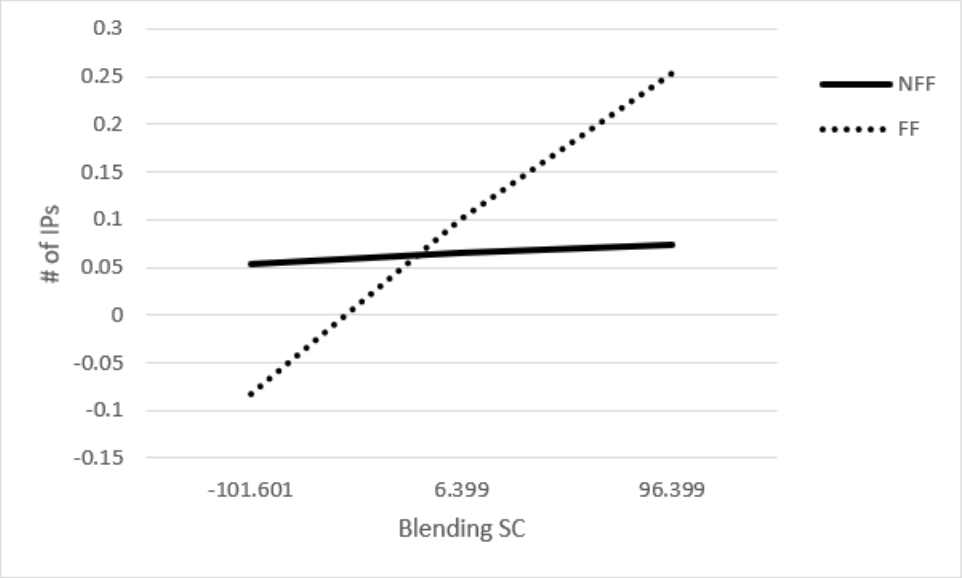

Figure 4.3 Hypothesis 1 Alternative Model 8 Simple Slopes

4.2.2 Hypothesis 2 – Post hoc

Hierarchical regression was performed to expand the assessment of the relationship between blending social capital on innovation for family firms in Hypothesis 2, which consisted of 6 alternative models with the additional measures for blending social capital (network size) and innovation (innovation alt. and # of Ips). Model 1 replaced blending social capital with the alternative IV measure of network size, which did not yield a significant result for blending social capital on innovation for family firms (see Table 4.8). Since hierarchical regression was the assessment method, Models 2 and 4 are the base models that include the control variables and alternative measures for innovation.

Model 3 shows that blending social capital does not significantly influence innovation when using the innovation alt. measure. The relationship between blending social capital and the number of the family firm's IPs was significant (β =.150, p-value = .049) in Model 5. However,

assessing blending social capital with network size in Model 6 does not significantly impact the number of IPs for family firms.

Table 4.8 Alternative Models for Hypothesis 2

	Innovation	Innovation Alt		# of IPs		
Variable	1	2	3	4	5	6
Blending SC			.077		.150*	
Network Size	.087					.043
Controls						
Firm Sector	.043	.058	.047	-.083	-.106	-.075
Firm Age	.096	-.067	-.060	.286***	.300***	.295***
Firm Size	.055	.138	.122	.226**	.195*	.223**
Bonding SC	.196**	.046	.036	-.003	-.021	-.004
Bridging SC	.490***	.353***	.348***	-.051	-.061	-.051
Constant	10.828	7.143	6.689	.208	-.053	.154
R^2	.315	.176	.181	.168	.188	.170
F	12.105***	6.796***	5.835***	6.411***	6.098***	5.375***
ΔR^2	.007		.005		.020	.002
Δ F	1.620		1.025		3.943*	.331

Note. N=165.
* Denotes significance at .05 level.
** Denotes significance at .01 level.
*** Denotes significance at .001 level.

4.2.3 Hypothesis 3 – Post hoc

In further assessing the moderating relationship of familial tie strength (FTS) on the relationship between blending social capital and innovation, 5 alternative models were performed by replacing a variable with one of the additional measures for the proposed relationship (see Table 4.9). The first alternative model assessed for Hypothesis 3 replaced FTS with familial tie strength intensity (FTSI), which produced a significant interaction between blending social capital and innovation (β =-.188, p-value = .005). The simple slopes analysis for Model 1 indicated a significant slope for low FSTI (p-value = .011), in which blending social capital negatively impacts family firm innovation. As shown in Figure 4.4, the Johnson-Neyman points

for Model 1 showed that values of FTSI ≤ -.646 below the mean and ≥ 2.261 above the mean result in significant influences of blending social capital on innovation.

The additional measures for the DV, innovation, were included to expand the assessment of alternative models for assessing Hypothesis 3. Models 2-5 in Table 4.9 show that the alternative models performed with innovation alt. and # of IPs as the DV did not produce any significant interactions between blending social capital and FTS or blending social capital and FSTI.

Table 4.9 Alternative Models for Hypothesis 3

	Innovation	Innovation Alt.		# of IPs	
Variable	1	2	3	4	5
Blending SC	.048	.077	.074	.141	.124
Familial Tie Strength		-.021		.055	
Blending X FTS		.069		-.094	
FTS Intensity	-.037		-.016		.076
Blending X FTSI	-.188**		-.062		-.108
Controls					
Firm Sector	.042	.047	.055	-.104	-.104
Firm Age	.074	-.072	-.063	.316***	.296***
Firm Size	.027	.130	.114	.186*	.193*
Bonding SC	.229***	.025	.049	-.007	-.001
Bridging SC	.522***	.349***	.360***	-.062	-.063
Constant	9.509	7.844	7.064	.344	.302
R^2	.351	.186	.186	.194	.201
F	10.564***	4.450***	4.455***	4.696***	4.903***
ΔR^2	.033	.003	.004	.005	.011
Δ F	8.031**	.513	.693	.967	2.152

Note. N=165. FTS = Familial Tie Strength. FTSI = Familial Tie Strength Intensity.
* Denotes significance at .05 level.
** Denotes significance at .01 level.
*** Denotes significance at .001 level.

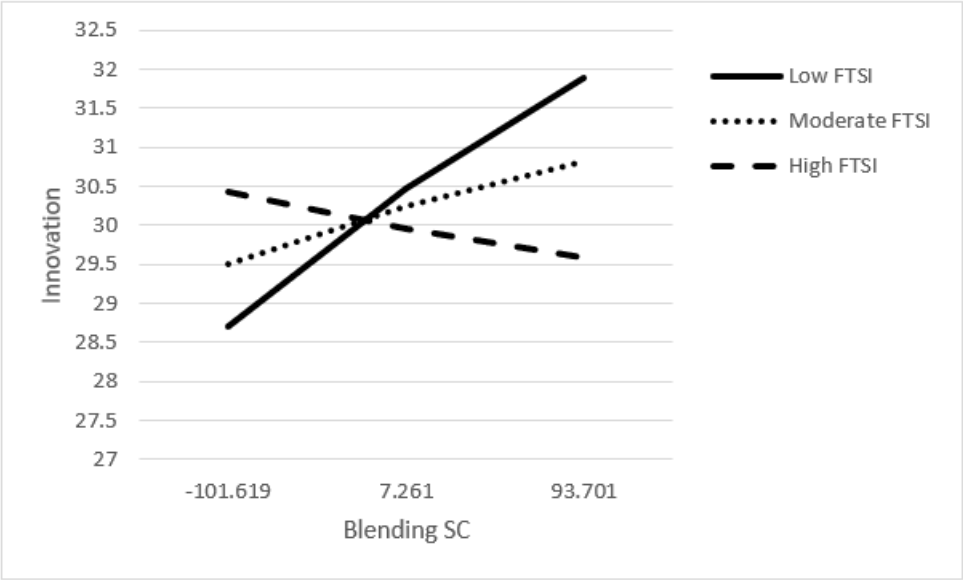

Figure 4.4 Hypothesis 3 Alternative Model 1 Simple Slopes

4.2.4 Hypothesis 4 – Post hoc

Two alternative models were performed to assess further the moderation relationship between external business ownership of external family stakeholders and blending social capital on innovation. As shown in Table 4.10, the moderating relationship between blending social capital and external business ownership does not produce significant interaction effects on innovation when using innovation alt. or # of IPs.

Table 4.10 Alternative Models for Hypothesis 4

	Innovation Alt	# of Ips
Variable	1	2
Blending SC	.073	.150
EBO	.059	.088
Blending X EBO	-.085	-.064
Controls		
Firm Sector	.034	-.118
Firm Age	-.066	.296***
Firm Size	.145	.204*
Bonding SC	.037	-.019
Bridging SC	.336***	-.076
Constant	7.757	.509
R^2	.193	.202
F	4.663***	4.933***
ΔR^2	.004	.002
Δ F	.723	.416

Note. N=165. EBO = External Business Ownership.
* Denotes significance at .05 level.
** Denotes significance at .01 level.
*** Denotes significance at .001 level.

CHAPTER V

DISCUSSION & CONCLUSION

5.1 Discussion of Results

The objective of this dissertation was to extend the discussion of social capital's influence on family firm innovation by introducing the concept of blending social capital. As displayed in the assessment of Hypothesis 1, blending social capital positively impacts firm innovation; however, this influence is not significantly different between the two firm types. Thus, the extent of blending social capital's influence on innovation is not greater in family firms. Additionally, the effect of blending social capital on innovation is not significant when solely assessing the relationship for family firms in Hypothesis 2. One explanation for the lack of influence on family firm innovation from blending social capital may be that the knowledge gained from these family stakeholders may not be as different as initially expected. The similar knowledge, in turn, does not create a synergistic effect between blending social capital and bonding social capital with family in the firm. Since the external family stakeholders are still part of the family in the business, the knowledge shared may be redundant to the knowledge found in the bonding social capital of the firm (Arregle et al., 2015). The redundant knowledge could result from the shared family values and histories being so deeply embedded that new knowledge is difficult to extract from these social ties. Further, the family entrepreneurs surveyed may view these social actors as family members removed from the business and fail to utilize the potential resource for business purposes. This may explain why including the strength of the familial tie or

family stakeholders that own external businesses as moderating factors in the relationship still does not lead to a significant relationship between blending social capital and family firm innovation in the main models.

Using the lens of social identity theory may provide another explanation for the bonding and bridging social capital with external family stakeholders and the bonding social capital with the family in the firm not synergistically influencing innovation. The social identity of the family members in the firm will shape the way they view and approach the external networks of the firm, such that family members that have either opted out of the family firm or never asked to be involved may retain the role as outsiders (Tasseli, Kilduff, & Menges, 2015; Vardaman, Allen, Rogers, 2018). Therefore, the boundaries of the firm may create a scenario where family members inside the firm self-categorize as the "ingroup" of the firm and view any family member outside of the firm as the "outgroup," which would bias the information shared between the groups of family members (Hornsey, 2008). Since the external family stakeholders fall in the "outgroup" of the firm, family members inside the firm may view them as potential threats to the affective endowments of the family firm too. Thus, the internal family members of the firms studied may be reluctant to engage in resource trading with external family stakeholders in an attempt to preserve the SEW from the outgroup (Gomez-Mejia et al., 2007). Counter to the initial arguments of the study, external family stakeholders may have minimal influence on established family firms.

On the other hand, the alternative models for assessing the hypothesized relationships provide some insight into the argument for blending social capital influencing family firm innovation. The size of the network, making up blending social capital, impacted family firm innovation, such that more external family stakeholders in the network positively influenced the

innovation of firms with greater family firm characteristics. Thus, as the degree of family involvement in the firm increases, so does the importance of external family stakeholders on the innovation of the family firm. Including more external family stakeholders in the blending social capital of the family firm may enhance the available resources, such as knowledge, contacts, and financial capital, for executing successful innovation efforts for the family firm. Additionally, blending social capital significantly impacts securing intellectual property, such as patents, trademarks, and copyrights, for family firms. Drawing from the blending social capital of the family firm may be an avenue for family firms to protect socioemotional wealth when seeking assistance in applying for intellectual property (Chirico et al., 2020). The findings in the additional models reaffirm the stance in the literature that family firms can benefit from extending outside the firm's boundaries to access resources from their external social ties (Goel & Jones, 2016). With that, blending social capital may be a viable option for family firms that may be hesitant to go outside the family for these external resources.

Counter to initial arguments, the interaction of familial tie strength negatively impacts the relationship of blending social capital on family firm innovation in the alternative models. Thus, stronger familial ties in the blending social capital makeup resulted in lower innovation for the family firms surveyed. An explanation for the inclusion of strong familial ties in blending social capital leading to lower innovation may be the nature of the knowledge present with these individuals. Stronger familial ties are represented by increased closeness, interactions, and intensity, which increases the redundancy in the knowledge available from these individuals (Adler & Kwon, 2002; Granovetter, 1973; Mathews et al., 1998). As the familial tie strengthens, the external knowledge gained from blending social capital may not be novel enough to prompt innovation in the firm, suppressing innovation (De Massis et al., 2015). Alternatively, more

weight may be placed on the "family" role of the external stakeholder with stronger familial ties, which may cause the family entrepreneur to have a distorted information sorting process. Thus, the family entrepreneur may rely more on social information processing based on previous interactions with the external family stakeholder rather than their rational decision-making process (Salancik & Pfeffer, 1978). For example, a family entrepreneur may hold greater fear about the repercussions that ignoring their retired mother's advice may have on the family's Thanksgiving dinner than the potential consequences following the advice may have for the business venture.

Social information processing may also play into the absence of any impact of blending social capital on innovation for family firms with external family stakeholders who are business owners in their networks. The family entrepreneur may frame their approach to satisficing based on who shared the information instead of the actual information shared (Simon, 1957). Thus, the decision made may best satisfy the needs of the family instead of the needs of the family business to innovate. Additionally, the potential for information overload is present for family entrepreneurs that rely on several external business owners to provide insight into business practices (O'Reilly, 1980). While the family entrepreneur receives more knowledge, this greater amount may overwhelm and cloud the entrepreneur's judgment on the best option for firm innovation. The increase in information from several sources may also result in more conflicting viewpoints shared as solutions to increase innovation, which may decrease the absorptive capacity of the family firm (Cohen & Levinthal, 1990; Fernhaber & Patel, 2012). Lastly, the negative interaction between familial tie strength and blending social capital (and the absence of an interaction between external business ownership and blending social capital) may result from

the lack of synergy between blending social capital and the bonding social capital with family in the firm, as mentioned earlier.

5.2 Contributions and Implications

The main contribution of this dissertation is the introduction of blending social capital as an additional component of social capital for firms, especially family firms. Blending social capital allows for more distinction to be made when examining the influence that family stakeholders may impose on the firm. While the main study assessments were not significant and implied that blending social capital may not be influential to family firm innovation, the alternative models displayed blending social capital and its elements as possibly impacting family firm innovation. Since the concept of blending social capital is introduced in this study, there are many opportunities for future research to explore how blending social capital may enhance the understanding of social capital as an intangible resource for firms. While not exhaustive, Table 5.1 provides example research questions that researchers may consider in further studying blending social capital in family firms.

Researchers interested in the concept of blending social capital may benefit from assessing the importance of social capital with external family stakeholders for established family firms. Previous research has shown the importance of external family stakeholders in successful nascent entrepreneurship (Chang et al., 2009); however, does the attitude towards external family social ties shift after the family firm is established? One approach to assessing the potential shift in attitudes towards external family stakeholders is to determine how the family members in the firm categorize the family members in the firm versus outside the firm. By understanding the groups that emerge from the classification of internal family members, researchers may understand the firm's willingness to go beyond the firm's boundaries for

resource trading with other family members. Similarly, researchers can assess the importance of including blending social capital in the discussion of family firm social capital by examining the degree of impact external family stakeholders have on the firm's decision-making process. Suppose external family stakeholders do not have any influence on the decision-making process of the established family firm. In that case, it is improbable that the firm will consider bridging social ties with family members when seeking external resources. Most importantly, these additional studies on the importance of external family stakeholders will allow researchers to determine if the conceptualization of blending social capital warrants further discussion in the literature.

Another opportunity for future research in understanding the importance of social ties with external family stakeholders is to examine the risk perception associated with exchanging resources with these family members. Researchers could ask family entrepreneurs to rate how risky exchanging resources with external family stakeholders would be for the family firm's financial and nonfinancial wealth. For instance, the researcher could ask the family entrepreneur to rank the impact that implementing a recommendation from an external family stakeholder would have on the firm's financial performance, reputation, and control over the firm. By assessing the family entrepreneur's perceived risk to financial and nonfinancial endowments of the firm due to exchanging resources with external family stakeholders, researchers can identify how willing family firms are to utilize blending social capital with family members outside the firm.

Due to the shift of family structures from the traditional "family" institution over the past few decades, researchers may be able to uncover a greater understanding of the social capital with external family stakeholders by assessing how the family dynamics between the family

entrepreneur and the external family members influence the potential resource bundle (Jaskiewicz & Dyer, 2017). Future research can examine if certain familial ties impact the degree to which family entrepreneurs utilize the blending social capital of the firm. For instance, are family entrepreneurs more likely to access resources from blending social capital with a second cousin over a brother-in-law? Likewise, researchers can assess how shifts in the family dynamics for the family entrepreneur influence their ability and willingness to access the benefits of blending social capital. An example research question would be, "How would the inclusion of children with an ex-spouse influence a family entrepreneur's access to resources from an ex-father-in-law?" Researchers should expand on the research question and examine how the inclusion of offspring from a new spouse will impact the family entrepreneur's access to resources from an ex-father-in-law. Exploring the various shifts in the family structure allows researchers to uncover and potentially explain aspects of the idiosyncratic nature of family firm social capital.

Future research may also benefit from examining the influence of social information processing on the family firm's ability and willingness to benefit from resources acquired through social capital with external family stakeholders. Additionally, assessing the family entrepreneur's perceived level of information overload as the network size of external family stakeholders as business owners increase. The absorptive capacity literature stream may be advantageous to include in the theorization of how characteristics of family stakeholders may alter the benefits realized from blending social capital. The firm's absorptive capacity may provide insight into why more social ties from external business owners or stronger familial ties in the blending social capital reverse the innovation in the family firm. While the study produced only some of the expected results of blending social capital on family firm innovation in the post

hoc analyses (i.e., 18% significant results), it is still argued that the concept is important to include in the discussion of family firm social capital.

The research demonstrates that even when including external family stakeholders in the social capital of family firms, it is still beneficial for family firms to participate in resource exchanges with nonfamily external stakeholders. The study reaffirms the notion that bridging social capital significantly impacts the innovation of family firms (De Massis, Frattini, & Lichtenthaler, 2013). Likewise, the argument that bonding social capital in family firms is paramount for innovation is further confirmed in the study. Therefore, it remains crucial for family entrepreneurs to establish and continually maintain the social ties between members inside the firm and members outside the firm to enhance innovation efforts. The study also shows that it may be beneficial for family entrepreneurs to consider resource exchanges with external family stakeholders, especially when considering intellectual property.

Table 5.1 Research Questions for Future Blending Social Capital Research

Question	Theoretical Lens
RQ: How do family firms identify external family members in relation to the firm?	Social Identity Theory Self-Categorization Theory Social Capital Perspective
RQ: How much influence do external family members provide in decision making of the family firm?	Decision-Making Theory Social Capital Perspective Social Information Processing
RQ: What are the perceived risks associated with exchanging resources with external family stakeholders?	Socioemotional Wealth Behavioral Agency Model Prospect Theory
RQ: How likely are family firms to exchange resources with external family stakeholders?	Social Networking Exchange Theory
RQ: How do family dynamics impact access to resources from external family stakeholders?	Family Structures & Dynamics
RQ: How does the strength of the familial tie with external family stakeholders impact the information processing of family firms?	Absorptive Capacity Social Information Processing
RQ: How does the size of the network with external family stakeholders impact the information processing of family firms?	Absorptive Capacity

5.3 Limitations

One of the research's main limitations is the imbalance between the types of firms assessed, with family firms only accounting for 165 responses and nonfamily firms making up 439 responses. The number of family firms may result in insignificant findings due to the low sample size (Garver & Mentzer, 1999). In future studies assessing the impact of blending social capital on family firm innovation, it may benefit the researcher to include more family firms in the sample. Even though Prolific data has been proven to be more significant than other surveying platforms (Peer et al., 2021), the anonymous nature of respondents makes it difficult to validate their business ownership. The lack of the ability of the researcher to verify the business ownership status of respondents on the Prolific platform may influence the study's replicability. In the further development of this study, it may prove more beneficial to expand the list of "In-Business" individuals from the MS-SOS database, increase the number of responses from this data source, and rerun the analyses using those responses.

The potential presence of biases in the data is another study limitation. While Harman's Single Factor Test resulted in a low threshold (i.e., 14.9%) and the study was designed to limit the presence of common method bias following Podsakoff and colleagues' (2003) recommendations, the common latent factor method for assessing common method bias showed concerns for the Wave 2 Survey data. However, when the data were combined in the full structural model of the study, the presence of common method bias was not found using the common latent factor method. Thus, it is difficult to proclaim that common method bias fully is not a concern of the data based on the common latent factor assessment results on the Wave 2 Survey data. For future studies with a similar research design, it may be better to identify another owner/controlling manager of the focal firm to answer the second wave of data. This research

design approach may still result in common method bias concerns as a survey will be used for both waves of data collection; however, having a different respondent may mitigate biases.

Similarly, the AVE of .476 for exploitation is a limitation of the study because convergent validity cannot be totally assumed since this construct is below the .50 threshold (Fornell & Larker, 1981). Even though the Heterotrait-Monotrait Ratio assessment reassured discriminant validity for exploitation, the shared variance assessment displayed exploitation's AVE of .479 being below the squared correlation between bonding-structural and bonding-relational of .699. Thus, the convergent and discriminant validity of exploitation may be questioned.

The collection of cross-sectional data through a self-response survey for one individual instead of including additional survey respondents from the family entrepreneur's network is a potential limitation of the study. In further developing the study of blending social capital, it would be beneficial if a network approach was applied to the research design in which external family stakeholders are included as actors to the family firm entrepreneur nodes. Additionally, a longitudinal data collection research approach would be beneficial in assessing the influence of blending social capital throughout different stages of the family firm. This would allow researchers to determine the impact of blending social capital on innovation at the start-up phase and different phases of growth for the family firm.

As shown in the lack of significant findings, the items used to capture the main study variables may need reconsidering. While validated scales were adopted and slightly adapted for the main study, it may prove better to follow scale development techniques to create an entirely new scale for capturing blending social capital. Developing a new scale would establish a specific instrument for measuring this new conceptualization of blending social capital of firms

and potentially decrease the number of survey items. Thus, the number of scale items and the inclusion of two waves of surveying may have caused some burnout from the respondents, especially the MS-SOS respondents. In updating the research design, the belief is that insights may still be gained from including blending social capital in assessing social capital's impact on family firms.

5.4 Conclusion

This dissertation tested the relationship between social capital and the entrepreneurial behaviors of family firms by introducing and examining the concept of blending social capital's influence on the extent of family firm innovation. Likewise, the moderating variables of familial tie strength and external family stakeholder external business ownership were analyzed for potential interaction effects with blending social capital and the family firm's innovation behaviors. Several scales were adopted and modified to examine the hypothesized relationships of the theoretical model. The research included scale development techniques, structural equation modeling, hierarchical regression, and moderated regression analyses for assessing the data and hypotheses. While the main analyses did not produce significant results, the findings from the alternative models should aid in uncovering potential antecedents that family firms can focus on to enhance their ability to exploit and explore entrepreneurial opportunities.

REFERENCES

Adler, P. S., & Kwon, S. W. (2002). Social capital: Prospects for a new concept. *Academy of Management Review*, *27*(1), 17-40.

Aldrich, H. E., & Cliff, J. E. (2003). The pervasive effects of family on entrepreneurship: Toward a family embeddedness perspective. *Journal of Business Venturing*, *18*(5), 573-596.

Andersén, J. (2015). The absorptive capacity of family firms: how familiness affects potential and realized absorptive capacity. *Journal of Family Business Management*, *5*(1), 73-89.

Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, *103*(3), 411.

Anderson, A. R., Jack, S. L., & Drakopoulou Dodd, S. (2005). The role of family members in entrepreneurial networks: Beyond the boundaries of the family firm. *Family Business Review*, *18*(2), 135-154.

Aragón-Amonarriz, C., Arredondo, A. M., & Iturrioz-Landart, C. (2017). How can responsible family ownership be sustained across generations? A family social capital approach. *Journal of Business Ethics*, 1-25.

Arregle, J. L., Batjargal, B., Hitt, M. A., Webb, J. W., Miller, T., & Tsui, A. S. (2015). Family ties in entrepreneurs' social networks and new venture growth. *Entrepreneurship Theory and Practice*, *39*(2), 313-344.

Arregle, J. L., Hitt, M. A., Sirmon, D. G., & Very, P. (2007). The development of organizational social capital: Attributes of family firms. *Journal of Management Studies*, *44*(1), 73-95.

Barnett, T., & Kellermanns, F. W. (2006). Are we family and are we treated as family? Nonfamily employees' perceptions of justice in the family firm. *Entrepreneurship Theory and Practice*, *30*(6), 837-854.

Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, *17*(1), 99-120.

Baron, R. A., & Markman, G. D. (2003). Beyond social capital: The role of entrepreneurs' social competence in their financial success. *Journal of Business Venturing*, *18*(1), 41-60.

Bauweraerts, J., & Colot, O. (2015). 7 Understanding entrepreneurial behaviors in family firms. Family Entrepreneurship: Rethinking the Research Agenda, 148-169.

Bentler, P. M., & Bonett, D. G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin*, *88*(3), 588.

Bierly, P. E., & Daly, P. S. (2007). Alternative knowledge strategies, competitive environment, and organizational performance in small manufacturing firms. *Entrepreneurship Theory and Practice*, *31*(4), 493-516.

Bird, M., & Wennberg, K. (2016). Why family matters: The impact of family resources on immigrant entrepreneurs' exit from entrepreneurship. *Journal of Business Venturing*, *31*(6), 687-704.

Boissevain, J. (1974). *Friends of friends: Networks, manipulators and coalitions*. St. Martin's Press.

Borgatti, S. P., & Foster, P. C. (2003). The network paradigm in organizational research: A review and typology. *Journal of Management*, *29*(6), 991-1013.

Bourdieu, P. (1983). The field of cultural production, or: The economic world reversed. *Poetics*, *12*(4-5), 311-356.

Bourdieu, P. (2011). The forms of capital. (1986). *Cultural theory: An anthology*, *1*, 81-93.

Bozec, Y., & Di Vito, J. (2019). Founder-controlled firms and R&D investments: New evidence from Canada. *Family Business Review*, *32*(1), 76-96.

Brundin, E., & Wigren-Kristoferson, C. (2013). Where the two logics of institutional theory and entrepreneurship merge: are family businesses caught in the past or stuck in the future?. *South African Journal of Economic and Management Sciences*, *16*(4), 452-467.

Burt, R.S. (1992). *Structural holes: The social structure of competition*. Cambridge, MA: Harvard University Press.

Burt, R. S. (2019). Network disadvantaged entrepreneurs: Density, hierarchy, and success in China and the West. *Entrepreneurship Theory and Practice*, *43*(1), 19-50.

Cabrera-Suárez, M. K., de la Cruz Déniz-Déniz, M., & Martín-Santana, J. D. (2011). Familiness and market orientation: A stakeholder approach. *Journal of Family Business Strategy*, *2*(1), 34-42.

Cabrera-Suárez, M. K., García-Almeida, D. J., & De Saá-Pérez, P. (2018). A dynamic network model of the successor's knowledge construction from the resource-and knowledge-based view of the family firm. *Family Business Review*, *31*(2), 178-197.

Carnes, C. M., & Ireland, R. D. (2013). Familiness and innovation: Resource bundling as the missing link. *Entrepreneurship Theory and Practice*, *37*(6), 1399-1419.

Carney, M. (2005). Corporate governance and competitive advantage in family–controlled firms. *Entrepreneurship Theory and Practice*, *29*(3), 249-265.

Carr, J. C., Cole, M. S., Ring, J. K., & Blettner, D. P. (2011). A measure of variations in internal social capital among family firms. *Entrepreneurship Theory and Practice*, *35*(6), 1207-1227.

Cennamo, C., Berrone, P., Cruz, C., & Gomez–Mejia, L. R. (2012). Socioemotional wealth and proactive stakeholder engagement: Why family–controlled firms care more about their stakeholders. *Entrepreneurship Theory and Practice*, *36*(6), 1153-1173.

Chang, E. P., Memili, E., Chrisman, J. J., Kellermanns, F. W., & Chua, J. H. (2009). Family social capital, venture preparedness, and start-up decisions: A study of Hispanic entrepreneurs in New England. *Family Business Review*, *22*(3), 279-292.

Chirico, F., Criaco, G., Baù, M., Naldi, L., Gomez-Mejia, L. R., & Kotlar, J. (2020). To patent or not to patent: That is the question. Intellectual property protection in family firms. *Entrepreneurship Theory and Practice*, *44*(2), 339-367.

Chirico, F., & Salvato, C. (2016). Knowledge internalization and product development in family firms: When relational and affective factors matter. *Entrepreneurship Theory and Practice*, *40*(1), 201-229.

Chrisman, J. J., Chua, J. H., De Massis, A., Frattini, F., & Wright, M. (2015). The ability and willingness paradox in family firm innovation. *Journal of Product Innovation Management*, *32*(3), 310-318.

Chrisman, J. J., Chua, J. H., Pearson, A. W., & Barnett, T. (2012). Family involvement, family influence, and family-centered non-economic goals in small firms. *Entrepreneurship Theory and Practice*, *36*(2), 267-293.

Chrisman, J. J., Chua, J. H., & Steier, L. P. (2011). Resilience of family firms: An introduction. *Entrepreneurship Theory and Practice*, *35*(6), 1107-1119.

Chrisman, J. J., Chua, J. H., & Zahra, S. A. (2003). Creating wealth in family firms through managing resources: Comments and extensions. *Entrepreneurship Theory and Practice*, *27*(4), 359-365.

Chrisman, J. J., & Holt, D. T. (2016). Beyond socioemotional wealth: taking another step toward a theory of the family firm. *Management Research: Journal of the Iberoamerican Academy of Management*.

Chrisman, J. J., & Patel, P. C. (2012). Variations in R&D investments of family and nonfamily firms: Behavioral agency and myopic loss aversion perspectives. *Academy of Management Journal*, *55*(4), 976-997.

Chua, J. H., Chrisman, J. J., Kellermanns, F., & Wu, Z. (2011). Family involvement and new venture debt financing. *Journal of Business Venturing*, *26*(4), 472-488.

Chua, J. H., Chrisman, J. J., & Sharma, P. (1999). Defining the family business by behavior. *Entrepreneurship: Theory and Practice*, *23*(4), 19-19.

Chua, J. H., Chrisman, J. J., Steier, L. P., & Rau, S. B. (2012). Sources of heterogeneity in family firms: An introduction. *Entrepreneurship Theory and Practice*, *36*(6), 1103-1113.

Clark, L. A., & Watson, D. (1995). Constructing validity: Basic issues in objective scale development. *Psychological Assessment*, *7*(3), 309.

Cohen, W. M., & Levinthal, D. A. (1990). Absorptive capacity: A new perspective on learning and innovation. *Administrative Science Quarterly*, *35*(1), 128-152.

Coleman, J. S. (1988). Social capital in the creation of human capital. *American Journal of Sociology*, *94*, S95-S120.

Coleman, J. S. (2000). Social capital in the creation of human capital. *Knowledge and Social Capital* (pp. 17-41).

Collier, J. E. (2020). *Applied Structural Equation Modeling using AMOS: Basic to Advanced Techniques*. Routledge.

Comrey, A. L. (1988). Factor-analytic methods of scale development in personality and clinical psychology. *Journal of Consulting and Clinical Psychology*, *56*(5), 754.

Daspit, J. J., Holt, D. T., Chrisman, J. J., & Long, R. G. (2016). Examining family firm succession from a social exchange perspective: a multiphase, multistakeholder review. *Family Business Review*, *29*(1), 44-64.

Daspit, J. J., & Long, R. G. (2014). Mitigating moral hazard in entrepreneurial networks: Examining structural and relational social capital in East Africa. *Entrepreneurship Theory and Practice*, *38*(6), 1343-1350.

De Carolis, D. M., Litzky, B. E., & Eddleston, K. A. (2009). Why networks enhance the progress of new venture creation: The influence of social capital and cognition. *Entrepreneurship Theory and Practice*, *33*(2), 527-545.

De Carolis, D. M., & Saparito, P. (2006). Social capital, cognition, and entrepreneurial opportunities: A theoretical framework. *Entrepreneurship Theory and Practice*, *30*(1), 41-56.

De Clercq, D., & Belausteguigoitia, I. (2015). Intergenerational strategy involvement and family firms' innovation pursuits: The critical roles of conflict management and social capital. *Journal of Family Business Strategy*, *6*(3), 178-189.

De Massis, A., Frattini, F., & Lichtenthaler, U. (2013). Research on technological innovation in family firms: Present debates and future directions. *Family Business Review*, *26*(1), 10-31.

De Massis, A., Di Minin, A., & Frattini, F. (2015). Family-driven innovation: Resolving the paradox in family firms. *California Management Review*, *58*(1), 5-19.

De Massis, A., Frattini, F., Pizzurno, E., & Cassia, L. (2015). Product innovation in family versus nonfamily firms: An exploratory analysis. *Journal of Small Business Management*, *53*(1), 1-36.

Dieleman, M. (2019). Reaping what you sow: The family firm innovation trajectory. *Journal of Family Business Strategy*, *10*(4), 100248.

Dillman, D. A. (1978). *Mail and telephone surveys: The total design method* (Vol. 19). New York: Wiley.

Discua Cruz, A., Howorth, C., & Hamilton, E. (2013). Intrafamily entrepreneurship: The formation and membership of family entrepreneurial teams. *Entrepreneurship Theory and Practice*, *37*(1), 17-46.

Drucker, P. (1954). The principles of management. *New York*.

Duran, P., Kammerlander, N., Van Essen, M., & Zellweger, T. (2016). Doing more with less: Innovation input and output in family firms. *Academy of Management Journal*, *59*(4), 1224-1264.

Dyer, W. G., Nenque, E., & Hill, E. J. (2014). Toward a theory of family capital and entrepreneurship: Antecedents and outcomes. *Journal of Small Business Management*, *52*(2), 266-285.

Eddleston, K. A. (2011). The family as an internal and external resource of the firm: The importance of building family-firm identity. *Family Business and Social Capital. Cheltenham: Edward Elgar*, 186-197.

Eddleston, K. A., Chrisman, J. J., Steier, L. P., & Chua, J. H. (2010). Governance and trust in family firms: An introduction. *Entrepreneurship Theory and Practice*, *34*(6), 1043-1056.

Eddleston, K. A., & Kellermanns, F. W. (2007). Destructive and productive family relationships: A stewardship theory perspective. *Journal of Business Venturing*, *22*(4), 545-565.

Eddleston, K. A., Kellermanns, F. W., & Collier, G. (2019). Research on family firm innovation: What do family firms actually think and do?. *Journal of Family Business Strategy*, *10*(4).

Eddleston, K. A., & Morgan, R. M. (2014). Trust, commitment and relationships in family business: Challenging conventional wisdom. *Journal of Family Business Strategy*, *3*(5), 213-216.

Edelman, L. F., Manolova, T., Shirokova, G., & Tsukanova, T. (2016). The impact of family support on young entrepreneurs' start-up activities. *Journal of Business Venturing*, *31*(4), 428-448.

Estrada-Robles, M., Williams, N., & Vorley, T. (2020). Navigating institutional challenges in Mexico. *International Journal of Entrepreneurial Behavior & Research, 26(1),* 98-121.

Fernhaber, S. A., & Patel, P. C. (2012). How do young firms manage product portfolio complexity? The role of absorptive capacity and ambidexterity. *Strategic Management Journal*, *33*(13), 1516-1539.

Field, A. (2014). *Discovering statistics using IBM SPSS statistics*. Sage.

Florin, J., Lubatkin, M., & Schulze, W. (2003). A social capital model of high-growth ventures. *Academy of Management Journal*, *46*(3), 374-384.

Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics. *Journal of Marketing Research*, 382-388.

Fuller, C. M., Simmering, M. J., Atinc, G., Atinc, Y., & Babin, B. J. (2016). Common methods variance detection in business research. *Journal of Business Research, 69*(8), 3192-3198.

Garud, R., Tuertscher, P., & Van de Ven, A. H. (2013). Perspectives on innovation processes. *Academy of Management Annals*, *7*(1), 775-819.

Garver, M. S., & Mentzer, J. T. (1999). Logistics research methods: employing structural equation modeling to test for construct validity. *Journal of Business Logistics*, *20*(1), 33.

Gedajlovic, E., & Carney, M. (2010). Markets, hierarchies, and families: Toward a transaction cost theory of the family firm. *Entrepreneurship Theory and Practice*, *34*(6), 1145-1172.

Gersick, K. E., Gersick, K. E., Davis, J. A., Hampton, M. M., & Lansberg, I. (1997). *Generation to generation: Life cycles of the family business*. Harvard Business Press.

Glover, J. L. (2013). Capital usage in family farm businesses. *Journal of Family Business Management*, *3*(2), 136-162.

Goel, S., & Jones III, R. J. (2016). Entrepreneurial exploration and exploitation in family business: A systematic review and future directions. *Family Business Review*, *29*(1), 94-120.

Gómez-Mejía, L. R., Haynes, K. T., Núñez-Nickel, M., Jacobson, K. J., & Moyano-Fuentes, J. (2007). Socioemotional wealth and business risks in family-controlled firms: Evidence from Spanish olive oil mills. *Administrative Science Quarterly*, *52*(1), 106-137.

Gomez-Mejia, L. R., Makri, M., & Kintana, M. L. (2010). Diversification decisions in family-controlled firms. *Journal of Management Studies*, *47*(2), 223-252.

Granovetter, M. S. (1973). The strength of weak ties. *American Journal of Sociology*, *78*(6), 1360-1380.

Guo, S., & Fraser, M. W. (2014). *Propensity score analysis: Statistical methods and applications* (Vol. 11). SAGE publications.

Hamilton, B. H., & Nickerson, J. A. (2003). Correcting for endogeneity in strategic management research. *Strategic Organization*, *1*(1), 51-78.

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, *43*(1), 115-135.

Herrero, I. (2018). How familial is family social capital? Analyzing bonding social capital in family and nonfamily firms. *Family Business Review*, *31*(4), 441-459.

Hoelscher, M. L. (2014). Does family capital outweigh the negative effects of conflict on firm performance?. *Journal of Family Business Management*, *4*(1), 46-61.

Hoffman, J., Hoelscher, M., & Sorenson, R. (2006). Achieving sustained competitive advantage: A family capital theory. *Family Business Review*, *19*(2), 135-145.

Hornsey, M. J. (2008). Social identity theory and self-categorization theory: A historical review. *Social and Personality Psychology Compass*, *2*(1), 204-222.

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 1-55.

Iacobucci, D. (2009). Everything you always wanted to know about SEM (structural equations modeling) but were afraid to ask. *Journal of Consumer Psychology*, *19*(4), 673-680.

Jacobs, J. (1965). *The Death and Life of Great American Cities.* London: Penguin Books.

Jaskiewicz, P., & Dyer, W. G. (2017). Addressing the elephant in the room: Disentangling family heterogeneity to advance family business research. *Family Business Review*, *30*(2), 111-118.

Jaskiewicz, P., Combs, J. G., & Rau, S. B. (2015). Entrepreneurial legacy: Toward a theory of how some family firms nurture transgenerational entrepreneurship. *Journal of Business Venturing*, *30*(1), 29-49.

Kellermanns, F. W., Eddleston, K. A., Barnett, T., & Pearson, A. (2008). An exploratory study of family member characteristics and involvement: Effects on entrepreneurial behavior in the family firm. *Family Business Review*, *21*(1), 1-14.

Khayesi, J. N., George, G., & Antonakis, J. (2014). Kinship in entrepreneur networks: Performance effects of resource assembly in Africa. *Entrepreneurship Theory and Practice*, *38*(6), 1323-1342.

Kline, R. B. (1998). Software review: Software programs for structural equation modeling: Amos, EQS, and LISREL. *Journal of Psychoeducational Assessment*, *16*(4), 343-364.

Kline, R. B. (2011). Principles and practice of structural equation modeling (3rd ed.). New York, NY; Guilford Press.

Koropp, C., Grichnik, D., & Kellermanns, F. (2013). Financial attitudes in family firms: The moderating role of family commitment. *Journal of Small Business Management*, *51*(1), 114-137.

Kotlar, J., De Massis, A., Frattini, F., Bianchi, M., & Fang, H. (2013). Technology acquisition in family and nonfamily firms: A longitudinal analysis of Spanish manufacturing firms. *Journal of Product Innovation Management*, *30*(6), 1073-1088.

Kumar, N., Stern, L. W., & Anderson, J. C. (1993). Conducting interorganizational research using key informants. *Academy of Management Journal*, *36*(6), 1633-1651.

Kung, F. Y., Kwok, N., & Brown, D. J. (2018). Are attention check questions a threat to scale validity?. *Applied Psychology*, *67*(2), 264-283.

Lavie, D., & Rosenkopf, L. (2006). Balancing exploration and exploitation in alliance formation. *Academy of Management Journal*, *49*(4), 797-818.

Leana, C. R., & Van Buren, H. J. (1999). Organizational social capital and employment practices. *Academy of Management Review*, *24*(3), 538-555.

Le Breton-Miller, L., & Miller, D. (2006). Why do some family businesses out-compete? Governance, long-term orientations, and sustainable capability. *Entrepreneurship Theory and Practice*, *30*(6), 731-746.

Lester, R. H., & Cannella, A. A. (2006). Interorganizational familiness: how family firms use interlocking directorates to build community-level social capital. *Entrepreneurship Theory and Practice*, *30*(6), 755-775.

Li, Y., Wang, X., Huang, L., & Bai, X. (2013). How does entrepreneurs' social capital hinder new business development? A relational embeddedness perspective. *Journal of Business Research*, *66*(12), 2418-2424.

Liao, J., & Welsch, H. (2005). Roles of social capital in venture creation: Key dimensions and research implications. *Journal of Small Business Management*, *43*(4), 345-362.

Lichtenthaler, U., & Muethel, M. (2012). Retracted: The impact of family involvement on dynamic innovation capabilities: Evidence from German manufacturing firms. *Entrepreneurship Theory and Practice*, *36*(6), 1235-1253.

Lubatkin, M. H., Simsek, Z., Ling, Y., & Veiga, J. F. (2006). Ambidexterity and performance in small-to medium-sized firms: The pivotal role of top management team behavioral integration. *Journal of Management*, *32*(5), 646-672.

Lubberink, R. J. B., Blok, V., van Ophem, J. A. C., & Omta, S. W. F. (2015). The Impact of Domestic Drivers and Barriers on the Entrepreneurial Start-up Decision. In *Family Entrepreneurship: Rethinking the research agenda*. Routledge.

Lumpkin, G. T., Brigham, K. H., & Moss, T. W. (2010). Long-term orientation: Implications for the entrepreneurial orientation and performance of family businesses. *Entrepreneurship and Regional Development*, *22*(3-4), 241-264.

Malhotra, N. K., Kim, S. S., & Patil, A. (2006). Common method variance in IS research: A comparison of alternative approaches and a reanalysis of past research. *Management Science*, *52*(12), 1865-1883.

Martinez, M. A., & Aldrich, H. E. (2011). Networking strategies for entrepreneurs: balancing cohesion and diversity. *International Journal of Entrepreneurial Behavior & Research*, *17*(1), 7-38.

Mathews, K. M., White, M. C., Long, R. G., Soper, B., & Von Bergen, C. W. (1998). Association of indicators and predictors of tie strength. *Psychological Reports*, *83*(3_suppl), 1459-1469.

McGrath, H., & O'Toole, T. (2018). Extending the concept of familiness to relational capability: A Belgian micro-brewery study. *International Small Business Journal*, *36*(2), 194-219.

Memili, E., Fang, H., Chrisman, J. J., & De Massis, A. (2015). The impact of small-and medium-sized family firms on economic growth. *Small Business Economics*, *45*(4), 771-785.

Miller, D., Wright, M., Le Breton-Miller, I., & Scholes, L. (2015). Resources and innovation in family businesses. *California Management Review*, *58*(1), 20-40.

Morris, M. H., Allen, J. A., Kuratko, D. F., & Brannon, D. (2010). Experiencing family business creation: Differences between founders, nonfamily managers, and founders of nonfamily firms. *Entrepreneurship Theory and Practice*, *34*(6), 1057-1084.

Morrison, E. W. (2002). Newcomers' relationships: The role of social network ties during socialization. *Academy of Management Journal*, *45*(6), 1149-1160.

Moss, T. W., Payne, G. T., & Moore, C. B. (2014). Strategic consistency of exploration and exploitation in family businesses. *Family Business Review*, *27*(1), 51-71.

Nahapiet, J., & Ghoshal, S. (1998). Social capital, intellectual capital, and the organizational advantage. *Academy of Management Review*, *23*(2), 242-266.

Nieto, M. J., Santamaria, L., & Fernandez, Z. (2015). Understanding the innovation behavior of family firms. *Journal of Small Business Management*, *53*(2), 382-399.

Nunally, J. C. (1978). Psychometric theory. 464-465.

O'Reilly III, C. A. (1980). Individuals and information overload in organizations: Is more necessarily better?. *Academy of Management Journal*, *23*(4), 684-696.

Patel, P. C., & Chrisman, J. J. (2014). Risk abatement as a strategy for R&D investments in family firms. *Strategic Management Journal*, *35*(4), 617-627.

Patel, P. C., & Fiet, J. O. (2011). Knowledge combination and the potential advantages of family firms in searching for opportunities. *Entrepreneurship Theory and Practice*, *35*(6), 1179-1197.

Payne, G. T., Moore, C. B., Griffis, S. E., & Autry, C. W. (2011). Multilevel challenges and opportunities in social capital research. *Journal of Management*, *37*(2), 491-520.

Pearson, A. W., Carr, J. C., & Shaw, J. C. (2008). Toward a theory of familiness: A social capital perspective. *Entrepreneurship Theory and Practice*, *32*(6), 949-969.

Peer, E., Rothschild, D., Gordon, A., Evernden, Z., & Damer, E. (2022). Data quality of platforms and panels for online behavioral research. *Behavior Research Methods*, *54*(4), 1643-1662.

Peng, M. W., & Luo, Y. (2000). Managerial ties and firm performance in a transition economy: The nature of a micro-macro link. *Academy of Management Journal*, *43*(3), 486-501.

Podsakoff, P. M., MacKenzie, S. B., Moorman, R. H., & Fetter, R. (1990). Transformational leader behaviors and their effects on followers' trust in leader, satisfaction, and organizational citizenship behaviors. *The Leadership Quarterly*, *1*(2), 107-142.

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, *88*(5), 879.

Portes, A. (1998). Social capital: Its origins and applications in modern sociology. *Annual Review of Sociology*, *24*(1), 1-24.

Portes, A., & Sensenbrenner, J. (1993). Embeddedness and immigration: Notes on the social determinants of economic action. *American Journal of Sociology*, *98*(6), 1320-1350.

Randerson, K., Seaman, C., Daspit, J. J., & Barredy, C. (2020). Institutional influences on entrepreneurial behaviours in the family entrepreneurship context: towards an integrative framework. *International Journal of Entrepreneurial Behavior & Research, 26(1),* 1-13.

Ring, J. K., Peredo, A. M., & Chrisman, J. J. (2010). Business networks and economic development in rural communities in the United States. *Entrepreneurship Theory and Practice*, *34*(1), 171-195.

Röd, I. (2016). Disentangling the family firm's innovation process: A systematic review. *Journal of Family Business Strategy*, *7*(3), 185-201.

Rodriguez, P., Tuggle, C. S., & Hackett, S. M. (2009). An exploratory study of how potential "family and household capital" impacts new venture start-up rates. *Family Business Review*, *22*(3), 259-272.

Rondi, E., De Massis, A., & Kotlar, J. (2019). Unlocking innovation potential: A typology of family business innovation postures and the critical role of the family system. *Journal of Family Business Strategy*, *10*(4), 100236.

Rothausen, T. J. (2009). Management Work—Family Research and Work—Family Fit: Implications for Building Family Capital in Family Business. *Family Business Review*, *22*(3), 220-234.

Salancik, G. R., & Pfeffer, J. (1978). A social information processing approach to job attitudes and task design. *Administrative Science Quarterly*, *23*(2), 224-253.

Salvato, C., & Melin, L. (2008). Creating value across generations in Family-Controlled businesses: The role of family social capital. *Family Business Review*, *21*(3), 259-276.

Sanchez-Famoso, V., Akhter, N., Iturralde, T., Chirico, F., & Maseda, A. (2015). Is non-family social capital also (or especially) important for family firm performance?. *Human Relations*, *68*(11), 1713-1743.

Santiago, A. L. (2011). The family in family business: Case of the in-laws in Philippine businesses. *Family Business Review*, *24*(4), 343-361.

Schumpeter, J. A. (1934). The theory of economic development. Cambridge. MA: Harvard.

Seaman, C., McQuaid, R., & Pearson, M. (2014). Networks in family business: a multi-rational approach. *International Entrepreneurship and Management Journal*, *10*(3), 523-537.

Shane, S., & Venkataraman, S. (2000). The promise of entrepreneurship as a field of research. *Academy of Management Review*, *25*(1), 217-226.

Sharma, P. (2008). Commentary: Familiness: Capital stocks and flows between family and business. *Entrepreneurship Theory and Practice*, *32*(6), 971-977.

Sharma, P., Chrisman, J. J., Chua, J. H., & Steier, L. P. (2020). Family firm behavior from a psychological perspective. *Entrepreneurship Theory and Practice*, *44*(1), 3-19.

Sharma, P., & Salvato, C. (2011). Commentary: Exploiting and exploring new opportunities over life cycle stages of family firms. *Entrepreneurship Theory and Practice*, *35*(6), 1199-1205.

Sirmon, D. G., & Hitt, M. A. (2003). Managing resources: Linking unique resources, management, and wealth creation in family firms. *Entrepreneurship Theory and Practice*, *27*(4), 339-358.

Sirmon, D. G., Hitt, M. A., Ireland, R. D., & Gilbert, B. A. (2011). Resource orchestration to create competitive advantage: Breadth, depth, and life cycle effects. *Journal of Management*, *37*(5), 1390-1412.

Smith, K. G., Collins, C. J., & Clark, K. D. (2005). Existing knowledge, knowledge creation capability, and the rate of new product introduction in high-technology firms. *Academy of Management Journal*, *48*(2), 346-357.

Sorenson, R. L., & Bierman, L. (2009). Family capital, family business, and free enterprise. *Family Business Review*, *22*(3), 193-195.

Stam, W., Arzlanian, S., & Elfring, T. (2014). Social capital of entrepreneurs and small firm performance: A meta-analysis of contextual and methodological moderators. *Journal of Business Venturing*, *29*(1), 152-173.

Steier, L. (2001). Next-generation entrepreneurs and succession: An exploratory study of modes and means of managing social capital. *Family Business Review*, *14*(3), 259-276.

Steier, L. (2007). New venture creation and organization: A familial sub-narrative. *Journal of Business Research*, *60*(10), 1099-1107.

Steier, L. (2009). Where do new firms come from? Households, family capital, ethnicity, and the welfare mix. *Family Business Review*, *22*(3), 273-278.

Stewart, A., & Hitt, M. A. (2012). Why can't a family business be more like a nonfamily business? Modes of professionalization in family firms. *Family Business Review*, *25*(1), 58-86.

Sun, X., Lee, S. H., & Phan, P. H. (2018). Family firm R&D investments in the 2007–2009 great recession. *Journal of Family Business Strategy*.

Tabor, W., Chrisman, J. J., Madison, K., & Vardaman, J. M. (2018). Nonfamily members in family firms: A review and future research agenda. *Family Business Review*, *31*(1), 54-79.

Tagiuri, R., & Davis, J. (1996). Bivalent attributes of the family firm. *Family Business Review*, *9*(2), 199-208.

Thompson, J. A. (2005). Proactive personality and job performance: A social capital perspective. *Journal of Applied Psychology*, *90*(5), 1011.

Tasselli, S., Kilduff, M., & Menges, J. I. (2015). The microfoundations of organizational social networks: A review and an agenda for future research. *Journal of Management*, *41*(5), 1361-1387.

Tsai, W., & Ghoshal, S. (1998). Social capital and value creation: The role of intrafirm networks. *Academy of Management Journal*, *41*(4), 464-476.

Uhlaner, L. M., Matser, I. A., Berent-Braun, M. M., & Flören, R. H. (2015). Linking bonding and bridging ownership social capital in private firms: Moderating effects of ownership–management overlap and family firm identity. *Family Business Review*, *28*(3), 260-277.

Uzzi, B., & Lancaster, R. (2003). Relational embeddedness and learning: The case of bank loan managers and their clients. *Management Science*, *49*(4), 383-399.

Van Auken, H., & Werbel, J. (2006). Family dynamic and family business financial performance: Spousal commitment. *Family Business Review*, *19*(1), 49-63.

Vardaman, J. M., Allen, D. G., & Rogers, B. L. (2018). We are friends but are we family? Organizational identification and nonfamily employee turnover. *Entrepreneurship Theory and Practice*, *42*(2), 290-309.

Vardaman, J. M., Taylor, S. G., Allen, D. G., Gondo, M. B., & Amis, J. M. (2015). Translating intentions to behavior: The interaction of network structure and behavioral intentions in understanding employee turnover. *Organization Science*, *26*(4), 1177-1191.

Veider, V., & Matzler, K. (2016). The ability and willingness of family-controlled firms to arrive at organizational ambidexterity. *Journal of Family Business Strategy*, *7*(2), 105-116.

Verbeke, A., & Kano, L. (2012). The Transaction Cost Economics Theory of the Family Firm: Family–Based Human Asset Specificity and the Bifurcation Bias. *Entrepreneurship Theory and Practice*, *36*(6), 1183-1205.

Villalonga, B., & Amit, R. (2006). How do family ownership, control and management affect firm value?. *Journal of Financial Economics*, *80*(2), 385-417.

Webb, J. W., Ketchen Jr, D. J., & Ireland, R. D. (2010). Strategic entrepreneurship within family-controlled firms: Opportunities and challenges. *Journal of Family Business Strategy*, *1*(2), 67-77.

Werbel, J. D., & Danes, S. M. (2010). Work family conflict in new business ventures: The moderating effects of spousal commitment to the new business venture. *Journal of Small Business Management*, *48*(3), 421-440.

Williams, D. (2006). On and off the 'Net: Scales for social capital in an online era. *Journal of Computer-Mediated Communication*, *11*(2), 593-628.

Zahra, S. A. (2005). Entrepreneurial risk taking in family firms. *Family Business Review*, *18*(1), 23-40.

Zahra, S. A. (2010). Harvesting family firms' organizational social capital: A relational perspective. *Journal of Management Studies*, *47*(2), 345-366.

Zahra, S. A. (2012). Organizational learning and entrepreneurship in family firms: Exploring the moderating effect of ownership and cohesion. *Small Business Economics*, *38*(1), 51-65.

Zahra, S. A. (2018). Entrepreneurial risk taking in family firms: The wellspring of the regenerative capability. *Family Business Review*, *31*(2), 216-226.

Zellweger, T. M., Chrisman, J. J., Chua, J. H., & Steier, L. P. (2019). Social structures, social relationships, and family firms. *Entrepreneurship Theory and Practice*, *43*(2), 207-223.

Zhang, X., Fang, H., Dou, J., & Chrisman, J. J. (2022). Endogeneity Issues in Family Business Research: Current Status and Future Recommendations. *Family Business Review*, *35*(1), 91-116.

APPENDIX A

SURVEYS

A.1 Wave 1 – Pretest Survey

Family Firm Identification

1) Please indicate the percentage of the business you own.

2) Please indicate the percentage of the business that other members of your family own.

3) Please indicate the percentage of the business that other individuals who are nonfamily own.

4) Please indicate the number of family members that are managers in the business.

5) Please indicate the number of family members that are employed in the business.

6) Do you wish/expect that the future successor as president of your business will be a family member? (Y/N)

Blending Social Capital

Intro: *Please indicate your level of agreement with each of the statements.*

Please note that external family members refer to family members that are not directly involved (that is, performing daily tasks, performing managerial decisions, or ownership greater than 5%) in the business.

1) I often discuss ideas about my business with external family members.

2) I talk about my business with external family members.

3) I try to get as much feedback on my business ideas from external family members as possible.

Attention Check) For this question, please select number two to demonstrate your attention.

4) I ask external family members for advice on how to improve my business ideas.

5) I feel external family members influence my decisions for my business.

6) There are several external family members I trust to help solve my business problems.

7) Family members spend time together in social occasions.

8) Family members maintain close social relationships.

9) Family members can rely on each other without any fear that some of them will take advantage even if the opportunity arises.

(1) Strongly disagree, (2) Disagree, (3) Neither disagree nor agree, (4) Agree, (5) Strongly agree

Innovation

Intro: *Please indicate your level of agreement with each of the statements.*

1) Over the past three years, our firm has pioneered the development of breakthrough innovations in its industry.

2) Our firm has introduced many new products or services over the past three years.

3) Our firm has emphasized making major innovations in its products and services over the past three years.

4) Our firm has emphasized taking bold, wide-ranging actions in positioning itself and its products or services over the past three years.

(1) Strongly disagree, (2) Disagree, (3) Somewhat disagree, (4) Neither disagree nor agree, (5) Somewhat agree, (6) Agree, (7) Strongly agree.

Familial Tie Strength

1) How frequent you communicate with your external family members.

(1 = once every 3 months or less (or never); 2 = once every 2 months; 3 = twice a month; 4 = once a month; 5 = once a week; 6 = twice a week; 7 = daily)

2) How close is your relationship with your external family members?

(1 = very distant 2 = distant; 3 = somewhat distant 4= neither distant nor close; 5 = somewhat close; 6= close; 7 = very close)

3) How many times do you have contact with an external family member in an average week?

4) How many hours do you spend with an external family member in an average week?

External Business Ownership

1) How many of your external family members own a business?

A.2 Wave 2 – Pretest Survey

Blending Social Capital

Intro: *Please note that external family members refer to family members that are not directly involved (that is, performing daily tasks, performing managerial decisions, or ownership greater than 5%) in the business.*

1) Please indicate the number of external family members that you have contact with. Please remember that external family members are family members that are neither employed in the business nor have greater than 5% ownership in the business.

Innovation

Exploitation

Intro: To what extent has your company emphasized the following activities over the past 5 years or since start-up?

1) Commits to improve quality and lower cost.

2) Continuously improves the reliability of its products and services.

3) Increases the levels of efficiency in its operations.

(1) Little or no emphasis, (2) Low emphasis, (3) Neutral, (4) Emphasis, (5) A great deal of emphasis.

Exploration

Intro: To what extent has your company emphasized the following activities over the past 5 years or since start-up?

1) Acquiring new technologies developed by other firms.

2) Investing in developing emerging technologies.

3) Supporting experimental R&D on emerging new technologies.

4) Developing new products.

5) Introducing new products to the market.

6) Leading the industry in introducing breakthrough products to the market.

(1) Little or no emphasis, (2) Low emphasis, (3) Neutral, (4) Emphasis, (5) A great deal of emphasis.

Bonding Social Capital

Intro: *Please indicate your level of agreement with each of the statements.*

1) Members who work in this business engage in honest communication with others.

2) Members who work in this business have no hidden agendas.

3) Members who work in this business willingly share information with others.

4) Members who work in this business have confidence in others.

5) Overall, members who work in this business trust others.

6) Members who work in this firm are committed to the goals of this firm.

7) There is a common purpose shared among members who work in this firm.

8) Members who work in this firm share the same vision for the future of this firm.

(1) Strongly disagree, (2) Disagree, (3) Neither disagree nor agree, (4) Agree, (5) Strongly agree

Attention Check) For this question, please select number four to demonstrate your attention.

Bridging SC w/Non-Family

Intro: Please select the number best describing the extent to which you and the top managers at your firm have utilized personal ties, networks, and connections during the past three years with the following to improve the performance of your business.

1) Top managers at buyer firms.

2) Top managers at supplier firms.

3) Political leaders in various levels of the government.

4) Officials in industrial bureaus.

5) Officials in regulatory and supporting organizations such as tax bureaus, state banks, commercial administration bureaus, and the like.

(1) Very little, (2) Little, (3) Somewhat little, (4) Neither little nor extensive, (5) Somewhat extensive, (6) Extensive, (7) Very extensive

A.3 Wave 1 MS-SOS – Main Study Survey

Family Firm Identification

1) Please indicate the percentage of the business you own.

2) Please indicate the percentage of the business that other members of your family own.

3) Please indicate the percentage of the business that other individuals who are nonfamily own.

4) Please indicate the number of family members that are managers in the business.

5) Please indicate the number of family members that are employed in the business.

6) Please indicate the total number of employees in the business.

7) Do you wish/expect that the future successor as president of your business will be a family member? (Y/N)

Blending Social Capital

Intro: *Please indicate your level of agreement with each of the statements.*

Please note that external family members refer to family members that are not directly involved (that is, performing daily tasks, performing managerial decisions, or ownership greater than 5%) in the business.

1) I often discuss ideas about my business with external family members.

2) I talk about my business with external family members.

3) I try to get as much feedback on my business ideas from external family members as possible.

Attention Check) For this question, please select number two to demonstrate your attention.

4) I ask external family members for advice on how to improve my business ideas.

5) I feel external family members influence my decisions for my business.

6) There are several external family members I trust to help solve my business problems.

7) Family members spend time together in social occasions.

8) Family members maintain close social relationships.

9) Family members can rely on each other without any fear that some of them will take advantage even if the opportunity arises.

(1) Strongly disagree, (2) Disagree, (3) Neither disagree nor agree, (4) Agree, (5) Strongly agree

Innovation

Intro: *Please indicate your level of agreement with each of the statements.*

1) Over the past three years, our firm has pioneered the development of breakthrough innovations in its industry.

2) Our firm has introduced many new products or services over the past three years.

3) Our firm has emphasized making major innovations in its products and services over the past three years.

4) Our firm has emphasized taking bold, wide-ranging actions in positioning itself and its products or services over the past three years.

(1) Strongly disagree, (2) Disagree, (3) Somewhat disagree, (4) Neither disagree nor agree, (5) Somewhat agree, (6) Agree, (7) Strongly agree.

Familial Tie Strength

1) How frequent you communicate with your external family members.

(1 = once every 3 months or less (or never); 2 = once every 2 months; 3 = twice a month; 4 = once a month; 5 = once a week; 6 = twice a week; 7 = daily)

2) How close is your relationship with your external family members?

(1 = very distant 2 = distant; 3 = somewhat distant 4= neither distant nor close; 5 = somewhat close; 6= close; 7 = very close)

3) How many times do you have contact with an external family member in an average week?

4) How many hours do you spend with an external family member in an average week?

External Business Ownership

1) How many of your external family members own a business?

A.4 Wave 1 Prolific – Main Study Survey

Business Demographics/Control Variables

1) What is the legal name of the business?

2) Please indicate the City and State of the business.

3) Please indicate the month and year the business started.

4) Please indicate the number of employees in the business.

5) Please select the category that best represents the business sector.

1 Agriculture, Forestry, Fishing and Hunting 2 Mining, Quarrying, and Oil and Gas Extraction 3 Utilities 4 Construction 5 Manufacturing 6 Wholesale Trade 7 Retail Trade 8 Transportation & Warehousing 9 Information 10 Finance & Insurance 11 Real Estate and Rental & Leasing 12 Professional, Scientific, & Technical Services 13 Management of Companies & Enterprises 14 Administrative and Support and Waste Management and Remediation Services 15

Educational Services 16 Health Care & Social Assistance 17 Arts, Entertainment, & Recreation 18 Accommodation & Food Services 19 Other Services (except Public Administration) 20 Public Administration

Family Firm Identification

1) Please indicate the percentage of the business you own.

2) Please indicate the percentage of the business that other members of your family own.

3) Please indicate the percentage of the business that other individuals who are nonfamily own.

4) Please indicate the number of family members that are managers in the business.

5) Please indicate the number of family members that are employed in the business.

6) Do you wish/expect that the future successor as president of your business will be a family member? (N/Y)

Blending Social Capital

Intro: *Please indicate your level of agreement with each of the statements.*

Please note that external family members refer to family members that are not directly involved (that is, performing daily tasks, performing managerial decisions, or ownership greater than 5%) in the business.

1) I often discuss ideas about my business with external family members.

2) I talk about my business with external family members.

3) I try to get as much feedback on my business ideas from external family members as possible.

Attention Check) For this question, please select number two to demonstrate your attention.

4) I ask external family members for advice on how to improve my business ideas.

5) I feel external family members influence my decisions for my business.

6) There are several external family members I trust to help solve my business problems.

7) Family members spend time together in social occasions.

8) Family members maintain close social relationships.

9) Family members can rely on each other without any fear that some of them will take advantage even if the opportunity arises.

(1) Strongly disagree, (2) Disagree, (3) Neither disagree nor agree, (4) Agree, (5) Strongly agree

Innovation

Intro: *Please indicate your level of agreement with each of the statements.*

1) Over the past three years, our firm has pioneered the development of breakthrough innovations in its industry.

2) Our firm has introduced many new products or services over the past three years.

3) Our firm has emphasized making major innovations in its products and services over the past three years.

4) Our firm has emphasized taking bold, wide-ranging actions in positioning itself and its products or services over the past three years.

(1) Strongly disagree, (2) Disagree, (3) Somewhat disagree, (4) Neither disagree nor agree, (5) Somewhat agree, (6) Agree, (7) Strongly agree.

Familial Tie Strength

1) How frequent you communicate with your external family members.

(1 = once every 3 months or less (or never); 2 = once every 2 months; 3 = twice a month; 4 = once a month; 5 = once a week; 6 = twice a week; 7 = daily)

2) How close is your relationship with your external family members?

(1 = very distant 2 = distant; 3 = somewhat distant 4= neither distant nor close; 5 = somewhat close; 6= close; 7 = very close)

3) How many times do you have contact with an external family member in an average week?

4) How many hours do you spend with an external family member in an average week?

External Business Ownership

1) How many of your external family members own a business?

A.5 Wave 2 MS-SOS – Main Study Survey

Blending Social Capital

Intro: *Please note that external family members refer to family members that are not directly involved (that is, performing daily tasks, performing managerial decisions, or ownership greater than 5%) in the business.*

1) Please indicate the number of external family members that you have contact with. Please remember that external family members are family members that are neither employed in the business nor have greater than 5% ownership in the business.

Innovation

Exploitation

Intro: To what extent has your company emphasized the following activities over the past 5 years or since start-up?

1) Commits to improve quality and lower cost.

2) Continuously improves the reliability of its products and services.

3) Increases the levels of efficiency in its operations.

(1) Little or no emphasis, (2) Low emphasis, (3) Neutral, (4) Emphasis, (5) A great deal of emphasis.

Exploration

Intro: To what extent has your company emphasized the following activities over the past 5 years or since start-up?

1) Acquiring new technologies developed by other firms.

2) Investing in developing emerging technologies.

3) Supporting experimental R&D on emerging new technologies.

4) Developing new products.

5) Introducing new products to the market.

6) Leading the industry in introducing breakthrough products to the market.

(1) Little or no emphasis, (2) Low emphasis, (3) Neutral, (4) Emphasis, (5) A great deal of emphasis.

Bonding Social Capital

Intro: *Please indicate your level of agreement with each of the statements.*

1) Members who work in this business engage in honest communication with others.

2) Members who work in this business have no hidden agendas.

3) Members who work in this business willingly share information with others.

4) Members who work in this business have confidence in others.

5) Overall, members who work in this business trust others.

6) Members who work in this firm are committed to the goals of this firm.

7) There is a common purpose shared among members who work in this firm.

8) Members who work in this firm share the same vision for the future of this firm.

(1) Strongly disagree, (2) Disagree, (3) Neither disagree nor agree, (4) Agree, (5) Strongly agree

Attention Check) For this question, please select number four to demonstrate your attention.

Bridging SC w/Non-Family

Intro: Please select the number best describing the extent to which you and the top managers at your firm have utilized personal ties, networks, and connections during the past three years with the following to improve the performance of your business.

1) Top managers at buyer firms.

2) Top managers at supplier firms.

3) Political leaders in various levels of the government.

4) Officials in industrial bureaus.

5) Officials in regulatory and supporting organizations such as tax bureaus, state banks, commercial administration bureaus, and the like.

(1) Very little, (2) Little, (3) Somewhat little, (4) Neither little nor extensive, (5) Somewhat extensive, (6) Extensive, (7) Very extensive

A.6 Wave 2 Prolific – Main Study Survey

Blending Social Capital

Intro: *Please note that external family members refer to family members that are not directly involved (that is, performing daily tasks, performing managerial decisions, or ownership greater than 5%) in the business.*

1) Please indicate the number of external family members that you have contact with. Please remember that external family members are family members that are neither employed in the business nor have greater than 5% ownership in the business.

Innovation

Exploitation

Intro: To what extent has your company emphasized the following activities over the past 5 years or since start-up?

1) Commits to improve quality and lower cost.

2) Continuously improves the reliability of its products and services.

3) Increases the levels of efficiency in its operations.

(1) Little or no emphasis, (2) Low emphasis, (3) Neutral, (4) Emphasis, (5) A great deal of emphasis.

Exploration

Intro: To what extent has your company emphasized the following activities over the past 5 years or since start-up?

1) Acquiring new technologies developed by other firms.

2) Investing in developing emerging technologies.

3) Supporting experimental R&D on emerging new technologies.

4) Developing new products.

5) Introducing new products to the market.

6) Leading the industry in introducing breakthrough products to the market.

(1) Little or no emphasis, (2) Low emphasis, (3) Neutral, (4) Emphasis, (5) A great deal of emphasis.

Bonding Social Capital

Intro: *Please indicate your level of agreement with each of the statements.*

1) Members who work in this business engage in honest communication with others.

2) Members who work in this business have no hidden agendas.

3) Members who work in this business willingly share information with others.

4) Members who work in this business have confidence in others.

5) Overall, members who work in this business trust others.

6) Members who work in this firm are committed to the goals of this firm.

7) There is a common purpose shared among members who work in this firm.

8) Members who work in this firm share the same vision for the future of this firm.

(1) Strongly disagree, (2) Disagree, (3) Neither disagree nor agree, (4) Agree, (5) Strongly agree

Attention Check) For this question, please select number four to demonstrate your attention.

Bridging SC w/Non-Family

Intro: Please select the number best describing the extent to which you and the top managers at your firm have utilized personal ties, networks, and connections during the past three years with the following to improve the performance of your business.

1) Top managers at buyer firms.

2) Top managers at supplier firms.

3) Political leaders in various levels of the government.

4) Officials in industrial bureaus.

5) Officials in regulatory and supporting organizations such as tax bureaus, state banks, commercial administration bureaus, and the like.

(1) Very little, (2) Little, (3) Somewhat little, (4) Neither little nor extensive, (5) Somewhat extensive, (6) Extensive, (7) Very extensive