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Abstract

Despite an extensive literature on the role of managerial capabilities in enhancing firm performance, relationships between socioemotional wealth, managerial capabilities, and performance in a family business context have not been investigated. This study relates FIBER dimensions (five characteristics of family firms commonly used in studies of family businesses) to socioemotional wealth, managerial capabilities, and firm performance, and empirically tests a mediated model using a sample of 150 small and medium-sized family businesses from the United Arab Emirates. The results illustrate that managerial capabilities mediate the relationships between three FIBER dimensions (identification of family members with the firm, binding social ties, and emotional attachment of family members) and performance.

Keywords: family business, socioemotional wealth, managerial capabilities, performance

1. Introduction

The concept of socioemotional wealth (SEW) has helped researchers understand the behaviors and outcomes of family businesses. SEW is an umbrella term that incorporates the non-economic, affective endowment or values that a family derives from firm ownership, and preserving SEW tends to be important in family firms (Berrone, Cruz, & Gómez-Mejía, 2012; Gómez-Mejía, Patel, & Zellweger, 2018). However, recent studies linking SEW to business performance show mixed results (see Cruz, Justo, & De Castro, 2012; Laffranchini, Hadjimarcou, & Kim, 2018; Naldi, Cennamo, Corbetta, & Gomez–Mejia, 2013; Schepers, Voordeckers, Steijvers, & Laveren, 2014). This could be from using different proxies of SEW (e.g., percentage of family control, family ownership, family management, family involvement, etc.) or because of

an intervention construct, such as managerial capabilities. While SEW may enhance employment relationships and financial performance for family firms located in industrial districts, it could negatively affect publicly listed family firms by hindering the entrepreneurial instincts that fuel positive performance. As stated by Holt, Pearson, Payne, and Sharma (2018, page 27) "*family firms have varying socioemotional concerns influenced by the extent of ownership discretion to pursue those concerns and prevailing capabilities to achieve the desired results*," implying a link between SEW and the capabilities of family firms.

SEW is an important factor in the development of managerial capacity, expertise, and processes and in a firm's ability to evaluate, shed, add, bundle, and leverage resources to achieve a competitive advantage (Graves & Thomas, 2006). Fernández and Nieto (2005) found that family-owned small and medium-sized enterprises (SMEs) often struggle to access necessary resources and capabilities to cultivate competitive advantage; they suffer from "liabilities of smallness" and the desire to protect family endowments. In this context, SEW can influence organizational culture and managerial capabilities in strategic decision-making, human resource practices, and communication styles (Cruz et al., 2012; Deephouse & Jaskiewicz, 2013; Firfiray, Cruz, Neacsu, & Gómez-Mejía, 2018; Hedberg & Luchak, 2018). A few other studies have found a positive relationship between managerial capabilities and performance (Barbero, Casillas, & Feldman, 2011; Carmeli & Tishler, 2004). Nevertheless, there is limited empirical evidence on the relationships between SEW, managerial capabilities, and performance, and more specifically, on the impact of SEW on performance (Debicki, Randolph, & Sobczak, 2017). Therefore, the primary objective of this study is to determine whether a family firm's emphasis on SEW affects its managerial capabilities and, ultimately, its performance.

SEW is a homegrown theoretical concept that emerged from studies on family business. Hence, it is important to establish the concept's legitimacy, which we can do by describing its

context in more depth (De Massis, Sharma, Chua, & Chrisman, 2012). Most empirical studies on family businesses have been conducted in Western countries (see Cennamo, Berrone, Cruz, & Gómez-Mejía, 2012; Hauck & Prügl, 2015; Hauck, Suess-Reyes, Beck, Prügl, & Frank, 2016). Family businesses account for more than 90% of the commercial activity in the Arab Middle East, and they employ over 80% of the region's workforce (Majumdar & Varadarajan, 2013; PWC, 2016; Rettab & Azzam, 2011). They generally pass ownership to the next generation, and strive to protect family members' short-term and long-term interests (Davis, Pitts, & Cormier, 2000). Arab society has a traditional value known as *Assabiyah,* which refers to people protecting members of their group against aggressive action from the outside world. Thus, family firms in the region are strongly inclined to put family priorities above commercial interests. Despite the fact that family endowments are highly prioritized in Arab culture (Lalonde, 2013), very few studies have applied the SEW perspective to the Arab Middle East region (Zahra, 2011). Therefore, a secondary objective of this study is to investigate SEW in the Arab cultural context and to shed light on family businesses in the Arab world. This will enrich the literature by providing a different cultural perspective.

To achieve our research objectives, we use the FIBER dimensions (Berrone et al., 2012; elaborated below) to measure aspects of SEW in family firms. Using a sample of 150 family firms in the United Arab Emirates, we empirically examine how managerial capabilities mediate the impact of SEW on business performance. This addresses the suggestion by Chrisman, Chua, Pearson, and Barnett (2012) to more deeply examine the mediators of family business performance. We also confirm the positive relationship between managerial capabilities and performance in the family SME context. Figure 1 illustrates this study's research model.

INSERT FIGURE 1 HERE

2. Theoretical Background and Hypotheses

The literature shows a divergence of opinions on the outcomes of SEW in family firms. Some studies have argued that family firms are unprofessionally managed and are vulnerable to nepotism and entrenchment, which can affect financial performance (Rutherford, Kuratko, & Holt, 2008; Schulze, Lubatkin, Dino & Buchholtz, 2001). Other studies have noted a high level of commitment in family firms along with trustworthiness, prudent financial management, resilience, and deep, firm-specific tacit knowledge (Alonso-Dos-Santos & Llanos-Contreras, 2019; Gómez-Mejía, Cruz, Berrone, & De Castro, 2011; Sirmon & Hitt, 2003). Although they used dimensions that differed slightly from the FIBER dimensions, recent research by Debicki et al. (2017) found that different dimensions of SEW can either align or conflict with financial performance, suggesting there may be a missing mediator in the SEW–performance relationship. Lack of managerial capability appears to be a main factor in small business failures (Rubio & Aragón, 2009). When SEW is a primary reference point for managerial decisions, it may lead to competitive outcomes through management processes and capabilities.

A capability is the power of an individual or organization to perform a particular activity with a specific purpose and an intended outcome (Helfat & Winter, 2011). In family SMEs, capabilities are embedded in the organization and are business-specific. Managerial capabilities can be difficult to acquire, since they are deeply rooted in organizational processes. In some cases, they are non-imitable (Carmeli & Tishler, 2004). Helfat and Martin (2015) noted that performance variations among firms may arise from heterogeneity in managerial abilities to create, extend, and modify company assets. There is a direct link between managerial capabilities and performance, but an overemphasis on SEW and on protecting the family endowment could detract from managerial performance and therefore, affect the overall business performance of the firm. The multi-dimensional nature of SEW further complicates these relationships. These unresolved debates and

issues in the current literature illustrate the need for a more comprehensive perspective on how SEW affects competitive advantage.

This study examines the influence of each dimension of SEW on managerial capabilities and the ways these interactions affect the performance of family firms. We use the FIBER scale (Berrone et al., 2012) to capture the multidimensional nature of SEW in family firms.

The FIBER dimensions, originally proposed by Berrone et al. (2012), have often been used for measuring SEW and have been validated in numerous studies on family firms (Filser, De Massis, Gast, Kraus, & Niemand, 2018; Gast, Filser, Rigtering, Harms, Kraus, & Chang, 2018; Hauck et al., 2016; Laffranchini et al., 2018). FIBER is an acronym that represents the following: family control and influence; identification of family members with firm; binding social ties; emotional attachment of family members; and renewal of family bonds through dynastic succession. The following sections expand on each dimension and present the corresponding research hypotheses.

2.1 FIBER Dimensions and Managerial Capabilities

The first FIBER dimension is *family control and influence*. This dimension has been widely used in empirical research to measure the degree of family involvement in a firm (Chrisman et al., 2012; González-Cruz & Cruz-Ros, 2016). Higher percentages of family ownership correlate with a stronger inclination to preserve the family endowment (Gómez-Mejía, Haynes, Núñez-Nickel, Jacobson, & Moyano-Fuentes, 2007; Pukall & Calabrò, 2014; Randolph, Alexander, Debicki, & Zajkowski, 2019). This dimension is a central feature of the SEW perspective represents the extent of family member control over strategic decision-making. For example, family owners may be more likely to appoint family members to key positions to maintain control and influence and may be unwilling to delegate authority to non-family managers, even when they are clearly competent

(De Massis, Kotlar, Campopiano, & Cassia, 2015; Gómez-Mejía et al., 2011). This behavior is prevalent in family SMEs, in which family employees tend to have considerable influence (Cruz et al., 2012). A firm that has a preference for hiring family members may cultivate a workforce that is highly committed, with firm-specific managerial capabilities, but nepotism can occur when key appointments are based on kinship rather than abilities (Jaskiewicz, Uhlenbruck, Balkin, & Reay, 2013). This can breed employee resentment and limit the utilization of external talent (Dyer, 2006; Firfiray et al., 2018). Moreover, serious governance issues—such as exploitation of business resources for personal use and benefit—can sometimes arise in family businesses. In one of the few studies that investigated managerial capabilities in family firms, Garcés-Galdeano, García-Olaverri and Huerta (2016) found that family ownership and management were negatively associated with managerial capabilities.

We hypothesize that family control and influence will have more negative than positive effects on managerial capabilities. Family SMEs suffer as a result of their small size, which limits resources and capabilities. Furthermore, when protection of family interests is paramount in a firm, it can constrain the firm's growth and competitiveness. Thus, we propose the following:

Hypothesis 1a: Family control and influence have a negative effect on managerial capabilities.

The second FIBER dimension is *identification of family members with the firm*. Family members realize close ties with a firm through their formal or informal participation in it (Deephouse & Jaskiewicz, 2013). Awareness of belonging to a family firm can emerge at a young age and strengthen over time, as family members grow up hearing stories about the business and learning firm-related identity cues that become important to their personal identities (Zellweger, Nason, Nordqvist, & Brush, 2013). Understandably, the sense of belonging to a family firm is stronger in family members than in non-family members. In the Arab world, many businesses use the family name as the business name, which can impart stability and invoke deeper commitment

to the firm. Family members desire to be recognized as belonging to the firm, and this generates collective social capital (Chirico & Salvato, 2016; Dyer, 2006), relational trust (Cennamo et al., 2012), and feelings of interpersonal closeness and solidarity among employees (Pieper, 2010). Loyalty to the family firm encourages the conscientious management of its assets. Managers of family firms may provide more development opportunities for employees and strive to promptly resolve conflicts and differences of opinion. These behaviors help the firm to be viewed more favorably by non-family stakeholders. When hiring outsiders, family SMEs tend to select from a small pool of candidates who share the family's values and culture (Gómez-Mejía et al., 2011), a practice that facilitates the development of managerial capabilities. Moreover, the relationships of family members to their firm has the potential to positively affect internal processes and the quality of the firm's services and products (Carrigan & Buckley, 2008). Strong identification with the firm ensures employee commitment and collective self-esteem. It also facilitates constructive management practices and a positive attitude toward capacity building (Chirico & Salvato, 2016). Family members play active roles in enhancing managerial capabilities and thus generating greater value for the firm. Therefore, we propose the following:

Hypothesis 1b: Identification of family members with the firm has a positive effect on managerial capabilities.

The third dimension is *binding social ties*, which is the interaction between the family firm and non-family stakeholders such as employees, suppliers, customers, and communities or social networks. Interactions with these stakeholders can strongly influence a firm's organizational social capital. The long-term orientation of a family firm drives long-term sustained relationships with outside parties such as customers, suppliers, alliance partners, and the community. In this way, family firms are found to be better at fostering strong social ties with stakeholders than non-family firms (Arregle, Hitt, Sirmon, & Very, 2007; Herrero, 2018). Previous studies have shown that

family firms have a stronger desire for acceptance in their communities. They pollute less, are more socially responsible, and have greater concern for their reputations than non-family firms (Berrone, Cruz, Gomez-Mejia, & Larraza-Kintana, 2010; Campopiano, De Massis, & Chirico, 2014; Dayan, Ng, & Ndubisi, 2019). The interplay between internal and external social ties helps family firms to remain viable across generations. It encourages positive management of stakeholders, thoughtfully constructed employment contracts for external recruits, stable employment for all employees, and an enhanced ability to obtain information and resources. Networking activities inside and outside family firms has been shown to have positive effects, especially on the development of managerial capabilities (Collins & Clark, 2003; Chung, Wang, Huang, & Yang, 2016). Hence, the managerial capabilities of family firms become stronger due to the reciprocal bonds between internal and external stakeholders. We hypothesize:

Hypothesis 1c: Binding social ties have a positive effect on managerial capabilities.

The fourth FIBER dimension, *emotional attachment*, refers to the emotions that foster a sense of "togetherness" in the family business context. Emotions are feelings that can give rise to thoughts, motivations and behaviors (Morris, Allen, Kuratko, & Brannon, 2010). They can sometimes outweigh rational considerations in decision making and other cognitive processes (Baron, 2008; Basco, 2013). Emotional attachments in family firms has been found to influence business processes, behavior, group dynamics, and performance in positive ways (Astrachan & Jaskiewicz, 2008; Kellermanns & Eddleston, 2007; Pieper 2010). Similarly, emotional attachment can amplify concerns about a firm's future and, therefore, lead to more responsible decision-making (Dayan et al., 2019; Miller & Le Breton-Miller, 2006). Managers with strong emotional attachment to a firm usually exhibit greater capabilities and management practices. Culture strongly influences emotions (Matsumoto, 1993), and culture's role in family businesses has also been discussed in the literature (Chrisman, Chua, & Sharma, 2005; Sharma & Manikutty, 2005).

Collectivistic cultures (such as the United Arab Emirates and other primarily Arab regions) tend to avoid expression of negative emotions. They emphasize consensus, loyalty, harmony, and sympathy, and individuals are urged to exercise control over personal desires and emotions (Labaki, Michael-Tsabari, & Zachary, 2013; Yan & Sorenson, 2006). This emotional censoring has the potential to negate individual voices and thus, undermine collaborative processes (Guillaume, Dawson, Otaye-Ebede, Woods, & West, 2017). However, this negative impact is manageable in the context of family SMEs, in which close-knit relationships are the norm. Frequent interactions in family SMEs set the stage for continuous collaboration and discussion. This in turn can facilitate managerial processes, cohesion, and the efficient use of resources (Pieper, 2010). Thus, we propose the following:

Hypothesis 1d: The emotional attachment of family members in family firms has a positive effect on managerial capabilities.

The last dimension is the desire to hand the firm down to future generations, that is, *renewal of family bonds through dynastic succession*. Founders or owners strive to preserve their legacy and perpetuate family control through intergenerational succession. Many studies have described the prevalence of business succession (Daspit, Holt, Chrisman, & Long, 2016). Well-planned succession mechanisms are important; conflicts over succession can result in dysfunctional relationships that precipitate more conservative behavior, limited aspirations for growth, and ultimately, weak performance (Zahra, 2005; Bennedsen, Nielsen, Pérez-González, & Wolfenzon, 2007). Passing managerial control to family candidates may result in a failure to retain talent, because employees may perceive limited potential for professional growth. In family SMEs, selecting managers from a pool of family members can reduce investment in human capital; the family firm may even pass over more qualified managers and hire suboptimal employees to protect exclusive succession (Liu, Eubanks, & Chater, 2015; Sirmon & Hitt, 2003). This is the so-called

"dark" side of SEW preservation (Kellermanns, Eddleston, & Zellweger, 2012), where the family's intention to preserve its legacy through succession has a negative impact on business. Prior studies indicate that prioritizing dynastic succession and the family legacy can hinder development of managerial capabilities. The option of hiring a more competent external manager is often disregarded, especially in SMEs. Thus, we propose the following:

Hypothesis 1e: The renewal of family bonds through dynastic succession has a negative effect on managerial capabilities.

2.2 Managerial Capabilities and Performance

Managerial capabilities refer to the power of management to consolidate skills and technologies into the competencies of a business, which allow it to react swiftly to changing opportunities (Prahalad & Hamel, 1990). They are one of the keys to competitive advantage. Managerial capabilities include skills involved in motivating others, communicating with stakeholders, making timely decisions, and resolving conflicts, as well as skills in aligning the firm's resources to achieve organizational goals. These capabilities are generally tacit, and therefore, difficult to imitate in the short run. The relationship between managerial capabilities and performance has long been recognized (Barney & Clark, 2007; Habbershon & Williams, 1999). Managerial capabilities enable top managers to evaluate internal and external environments, improve organizational performance, and create competitive advantage. Capable managers assign and distribute the firms' resources in ways that lead to organizational success (Sirmon, Hitt, & Ireland, 2007). Managerial capabilities are also important determinants in the growth of SMEs (Barbero et al., 2011), and this relationship has also been established in the context of family businesses (Agyapong, Ellis, & Domeher, 2016; Miller, Lee, Chang, & Le Breton-Miller, 2009). Pearson, Carr, and Shaw (2008) proposed that family involvement in firms could lead to the

development of family-specific capabilities, resulting in better performance. Family businesses generally focus on reputation building and maintaining stable relationships with external providers. The long-term development of core competencies, resources, and capabilities positively affect business performance (Kim & Gao, 2013). This visionary and purposeful investment approach builds on path dependencies that enable a firm's capabilities to grow cumulatively, and it is difficult for rivals to imitate this path. In the aforementioned ways, family SMEs achieve both economic and non-economic goals and increase their overall value. We hypothesize the following:

Hypothesis 2*:* Managerial capability has a positive effect on financial performance.

2.3 SEW and Performance

Family owners or managers who emphasize SEW may work against the interests of non-family owners. For example, family owners may avoid profitable ventures that threaten their control. In the context of family SMEs, family members usually receive higher remuneration and have longer tenures than nonfamily employees regardless of the organization's performance (Gómez-Mejía, Nunez-Nickel, & Gutierrez, 2001). Nevertheless, not all strategic decisions to maximize SEW endowment result in economic losses (Martin & Gómez-Mejía, 2016). Habbershon and Williams (1999) argued that while "familiness" can constrain competitiveness, it also offers some advantages in wealth creation. They modeled capability as a mediator between familiness and performance, since familiness affects performance through family goals, relationships, resources, and processes (Madison, Daspit, Turner, & Kellermanns, 2018; Mazzi, 2011). Similarly, family social capital can be mediated by internal capabilities such as knowledge internationalization to positively impact product development (Chirico & Salvato, 2016). Solid managerial capabilities can boost performance regardless of familiness or SEW orientation. One recent study (Fitz-Koch & Nordqvist, 2017) related innovation capability to SEW dimensions and

better financial performance. However, this was a single case study, and the relationship between managerial capabilities, SEW, and performance was not established. In this study, we propose that managerial capabilities mediate the relationship between SEW dimensions and performance. This proposition adopts "*family firm research from a SEW preservation perspective*" as presented by Gómez-Mejía et al. (2011). Family involvement through SEW drives family-specific managerial capabilities, leading to increased performance. Hence, we propose the following:

Hypothesis 3*:* A firm's managerial capabilities mediate the relationship between the FIBER dimensions of SEW and financial performance.

3. Methodology

In this study, we define a small or medium-sized family business as a family-owned firm with at least 51 percent of the shares owned by one family, with at least one member of the management team from that family, and with 250 employees or fewer. Our study used a sample of 150 Emirati firms that meet these criteria. Data were collected via a survey from the Khalifa Fund for Enterprise Development (KFED) from family firms in a network of an innovation and entrepreneurship research group at the United Arab Emirates University (UAEU). The sample frame comprised 238 family firms, of which 182 were associated with KFED and 56 were from the UAEU group network. A total of 176 questionnaires were returned. Of these, 26 were not completed correctly and were rejected. Therefore, the final sample comprised 150 firms, representing a response rate of 63.02%. Table 1 lists the characteristics of the respondents sampled.

INSERT TABLE 1 HERE

Respondents were first screened by phone to ensure membership in our target group. Then, survey instruments were distributed and personally collected by research assistants. Two sets of hard copy questionnaires were provided to each business: one to the family member owner-

manager and the other to a non-family manager. Managerial capabilities and SEW dimensions were measured using data from family member owner-managers, as they were expected to provide more objective and reliable data on these variables. Performance was measured using responses from both managers. Data were collected from multiple respondents to avoid single-source bias (Zacca, Dayan, & Ahrens, 2015, p. 7). A native Arabic speaker fluent in English translated the survey instrument from English to Arabic, and a different bilingual speaker then back-translated the survey into English. The research team and translators reconciled any discrepancies.

The survey instruments were pre-tested with four members of family businesses in the Abu Dhabi Emirate, and these individuals were asked to provide feedback on the clarity and accuracy of the instruments (Dayan, Zacca, & Di Benedetto, 2013; Zacca, Dayan, & Ahrens, 2015). Independent sample t-tests were carried out on the two groups of data to identify any systematic differences in structural criteria (e.g., industry type, age, and size of firm) and FIBER scales between the respective subsamples. The tests showed no relevant significant differences. Our sample of 150 family businesses was a relatively small sample compared with those used in similar regional studies (Goel, Voordeckers, Van Gils, & van den Heuvel, 2013). Data collection in this region is more restricted because of a conservative business environment in which Arab business owners are reluctant to share opinions and firm information.

3.1 Measures

SEW dimensions. To measure SEW, we adopted the five-dimensional FIBER scale, which was developed by Berrone et al. (2012). Family member owner-managers responded to statements describing their firm's SEW using a five-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree).

For empirical validation of the FIBER scale, we conducted exploratory factor analysis (EFA) based on principal axis analysis with oblique (promax) rotation, $\kappa = 4$ (Matsuno, Mentzer, & Rentz, 2000). Our results were quite similar to those in Hauck et al. (2016). Unidimensionality was not observed for more than three dimensions at the same time for any of the iterations. For further validation, we followed the suggestion of Hauck et al. (2016) and used three different approaches to determine the number of factors. First, we conducted EFA based on principal axis analysis with oblique (promax) rotation ($\kappa = 4$; Kuppelwieser & Sarstedt, 2014). We conducted parallel analysis (Horn, 1965) as a second approach and the minimal average partial test (MAP test; Velicer, 1976) as a third approach. The EFA resulted in an eight-factor solution in 76% of the iterations. The parallel analysis consistently pointed to a four-factor solution for each of the iterations. Similarly, in 50% of the iterations, the MAP test resulted in four factors. For the other 50%, we compared the results of the Chi^2 test, communalities, and factor loadings for the competing models resulting from the MAP test and parallel analysis (Kuppelwieser & Sarstedt, 2014). We did not rely solely on Chi^2 differences as an appropriate model fit index due to the nested nature of the models; we considered several other fit indices such as the comparative fit index (Gerbing & Anderson, 1988). The results favored a four-dimensional solution in 76% of the iterations. The remaining iterations were split between a five-factor solution (14% of iterations) and a six-factor solution (10% of iterations).

Based on our findings and on Hauck et al. (2016), the unidimensionality of the FIBER dimensions could not be confirmed. Following the suggestion of Hauck et al. (2016), we opted to maintain different variables—one for each dimension, reflecting the hypothesis that these dimensions are independent.

Managerial capabilities. Managerial capabilities were measured with a scale developed and validated by Hitt and Ireland (1985) and validated again by Carmeli and Tishler (2004). This scale reflects a firm's ability to perceive opportunities and threats and to develop and communicate its

purpose, and it also reflects the level of participation by top and intermediate managers in firm decision-making. Managerial capabilities, measured by 12 items, showed a Cronbach's alpha of 0.82.

Performance. Performance was measured by return on assets (ROA) (a commonly used measure of financial performance) and validated by prior research in management studies (Herrero, 2018; Minichilli, Nordqvist, Corbetta, & Amore, 2014). Respondents rated their firm's ROA compared with key competitors using a 5-point scale (1=much worse than competitors to 5=much better than competitors). This approach is supported by previous studies demonstrating that assessing subjective financial performance is useful in studies on family businesses (Alonso-Dos Santos & Llanos-Contreras, 2018; Rutherford et al., 2008). Other studies have described subjective financial performance as part of a broader definition of performance (Wallace, Little, Hill, & Ridge, 2010).

Control variables. As in other SEW-performance studies, we used several control variables. Past studies have used firm-level control variables such as the age and size of the firm, its life-cycle stage, and the number and generations of family members in the firm; and sector-related variables such as industry type and primary product. Past research (e.g., O'Boyle, Rutherford, & Pollack, 2010; Schepers et al., 2014) has shown that many of these variables are related to performance, but not all are directly relevant to our hypotheses.

The controls used in this study were as follows: (1) firm age (*Age*) was calculated as the number of years since a firm's foundation; (2) firm size (*Size*) was measured using the logarithm of the number of employees; (3) venture life cycle (*VLC*) was measured through dummy variables representing four venture life cycles (start-up, growing, mature, and declining); (4) number of family members (*NFM*) was measured using the natural logarithm of the number of family

members currently working in the firm; and (5) generation (*GEN*) was measured with dummy variables representing four generations (first, second, third, and fourth or higher generations).

3.2 Data Analysis

This study employed partial least squares structural equation modeling (PLS-SEM) with SmartPLS v.3.2 software (Ringle, Wende, & Becker, 2015). For several reasons, PLS-SEM was selected to validate and test the conceptual model (Roldán & Sánchez-Franco, 2012). *First*, as a component-based technique, PLS-SEM is preferable to covariance-based structural equation-modeling techniques (e.g., AMOS type) when the aims of a study are to understand individual constructs and the cause–effect relationships among the constructs and also to conduct exploratory research using a relatively complex model (Chin, 1998; Hair, Sarstedt, Ringle, & Mena, 2012; Sarstedt, Ringle, & Hair, 2014). Our research is exploratory and uses a relatively complex model. It considers the impact of the FIBER dimensions on managerial capabilities as well as the dimensions' mediating effects on performance, which has not been studied previously in the family business context. *Second*, PLS is an appropriate technique when a sample size is small (Hair, Black, Babin, & Anderson, 2010), which is an issue in this study. *Third*, PLS-SEM allows us to analyze composites, whereas covariance-based SEM does not.

This study evaluates the research model in two steps: a step pertaining to the outer model (measurement model) and a step pertaining to the inner model (structural model) (Hair, Hult, Ringle, & Sarstedt, 2013). We then applied resampling procedures (i.e., bootstrapping) to 2,000 resamples (Hair et al., 2012).

4. Results

4.1 Outer Model Results

To evaluate the reflective measurement models (FIBER dimensions and managerial capabilities), we considered three common aspects in the PLS analysis: convergent validity, internal consistency reliability, and discriminant validity. The rule of thumb on internal item reliability is to accept items with loadings of 0.60 or greater (Nunnally, 1978) (See Table 2). Four indicators of FIBER constructs—the dimensions of family control and influence (*FCI*); identification of family members with the firm (*IFM*); emotional attachment of family members (*EAFM*); and renewal of family bonds through dynastic succession (*RFB*)—were deleted from the original model because of their low outer loadings. All outer loadings in the six reflective measurement models were at least 0.60 and statistically significant ($p < 0.001$).

INSERT TABLE 2 HERE

All multidimensional constructs and dimensions met the requirement of construct reliability with composite reliabilities (CR) greater than the usual 0.70 benchmark. Specifically, the CR scores ranged from 0.803 for *RFB* to 0.891 for *IFM*. Therefore, we conclude that the measurement items are robust in terms of internal consistency and reliability.

Convergent validity was assessed using average variance extracted (AVE) for all latent constructs that include reflective indicators and factor loading criteria (Fornell & Larcker, 1981). Factor loading should be greater than 0.60, and AVE should be larger than the square of its largest correlation with any construct; all reflective measurement constructs used in this study fulfill these requirements. Table 2 shows that the factor loading of most items ranged from 0.607 to 0.869. The values of average variance ranged from 0.488 to 0.622. Following the suggestion of Henseler, Ringle, and Sarstedt (2015), the heterotrait-monotrait (HTMT) ratios are all lower than 0.85 and the upper confidence bounds (97.5%) are less than one (Table 3). These HTMT results indicate

satisfactory discriminant validity within the data. Taken together, these tests provide sufficient assurance that the reflective measurement model fits the data well.

INSERT TABLE 3 HERE

As suggested by Wilden, Gudergan, Nielsen, and Lings (2013), multicollinearity was tested using variance inflation factors (VIF). The VIF calculation shows that the values of all first-order terms are below 3.50, well below the cut-off value of 5 (Hair et al., 2010).

4.2 Inner Model Results

The results of this study are presented in the models depicted in the four figures. Model 1, shown in Figure 2, describes the significant total effects of FIBER dimensions on performance considering the effects of controls (*Age, Size, VLC, GEN, NFM, IT*). As seen in Figure 1, family control and influence (*FCI*), building social ties (*BST*), and renewal of family bonds (*RFB*) have significant effects on performance ($c_1 = 0.178^{*}$, $c_3 = 0.225^{**}$, $c_5 = 0.194^{*}$, respectively). However, identification of family members (*IFM*) and emotional attachment of family members (*EAFM*) are not significant. That is, for *IFM* and *EAFM*, the standardized coefficients were $c_2 = -0.148^{ns}$ and $c_4 = 0.073^{ns}$, respectively.

INSERT FIGURE 2 HERE

Model 2, illustrated in Figure 3, is the fully mediated model without the direct relationships between FIBER dimensions and performance. Figure 3 demonstrates that *IFM*, *BST*, and *EAFM* have significantly positive effects on managerial capabilities ($a_2 = 0.290^{***}$ for IFM, $a_3 = 0.201^{**}$ for *BST*, and $a_4 = 0.229^{**}$ for *EAFM*). However, other FIBER dimensions do not have significant effects ($a_1 = -0.04^{ns}$ for *FCI*; $a_5 = -0.074^{ns}$ for *RFB*). Thus, H1b, H1c, and H1d are supported, but H1a and H1e are not supported. With respect to the managerial capabilities-performance relationship, managerial capabilities have a significantly positive effect on performance ($b = 0.372^{***}$), supporting H2.

INSERT FIGURE 3 HERE

Model 3, depicted in Figure 4, shows how the direct effects of FIBER dimensions on performance change when managerial capabilities are included. The results in Model 3 show significant direct effects of *IFM*, *BST*, and *EAFM* ($a_2 = 0.313^{***}$, $a_3 = 0.194^{*}$, and $a_4 = 0.216^{**}$, respectively) on managerial capabilities. These results provide further support for H1b, H1c, and H1d. Therefore, the regression coefficients a_1, a_2, and a_4 (which represent the direct effects of *IFM*, *BST*, and *EAFM* on managerial capabilities, respectively) and b (which represents the direct effect of managerial capabilities on performance) represent the potential indirect effects of *IFM*, *BST*, and *EAFM* on performance via managerial capabilities as the mediator.

INSERT FIGURE 4 HERE

The basic condition for determining a mediating effect is testing the significance of $a \times b_1$ (Hayes, 2009); the values for these indirect effects were obtained from SmartPLS. The results (see Tables 4 and 5) show significant indirect effects of *IFM* ($a_2 \times b_1 = 0.100^{***}$), *BST* ($a_3 \times b_1 = 0.062^{*}$) and *EAFM* ($a_4 \times b_1 = 0.069^{*}$) on performance via managerial capabilities. Consequently, these results assume a partial mediation of managerial capabilities in the relationships between *IFM* and performance and *BST* and performance. This is because both the direct effects ($c'_2 = -0.224^{**}$ for *IFM*; $c'_3 = 0.183^{*}$ for *BST*) and the indirect effects ($a_2 \times b_1 = 0.100^{***}$ for *IFM* on performance via managerial capabilities; $a_3 \times b_1 = 0.062^{*}$ for *BST* on performance via managerial capabilities) are significant. Managerial capabilities fully mediate the relationship between *EAFM* and performance, as the direct effect is not significant ($c'_4 = -0.016^{ns}$), while the indirect effect is significant ($a_4 \times b_1 = 0.069^{*}$). These results indicate that H3 is only partially supported.

INSERT TABLE 4 HERE

Regarding control variables, the results (Table 4) show that *NFM* has a significant impact on performance ($\beta = 0.136$, $p < 0.10$), but none of other control variables have a significant impact (β

= 0.058, $p > 0.01$; $\beta = 0.055$, $p > 0.01$; $\beta = 0.150$, $p > 0.01$; $\beta = -0.242$, for *GEN*, *VLC*, *Age*, and *Size*, respectively).

4.3 Predictive Validity

Predictive power is the ability of a model to make accurate predictions about new observations that are open to interpretation (Shmueli & Koppius, 2011). Predictive validity would further support the significant connections in the theoretical model. The predictive validity of Model 4 (the robust model) depicted in Figure 5 is assessed because this model includes the main exogenous constructs (*IFM*, *BST*, and *EAFM*), with significant indirect links via managerial capabilities to the key dependent variable (performance). Therefore, the critical question is whether these three FIBER dimensions predict performance in additional samples that are separate from the dataset used to test the theoretical research model (Woodside, 2013).

INSERT FIGURE 5 HERE

Following procedures proposed by Cepeda, Henseler, Ringle, and Roldán (2016), the predictive validity of Model 4 was assessed using cross-validation with holdout samples. First, each indicator of the holdout sample was standardized, and the scores for each construct were estimated using the path coefficients from the training sample. The construct scores were then standardized, and the prediction scores for each endogenous construct were calculated using the path coefficients from the training sample. Finally, the proportion of explained variance (R^2) was calculated from the squared correlation of the prediction scores and the construct scores of the endogenous constructs.

For the two endogenous constructs, the paths toward performance have strong predictive validity because of high explained variances in both the training sample ($R^2 = 0.63$) and the holdout sample ($R^2 = 0.57$). The paths for predicting managerial capabilities also performed well and satisfy

the explained variances in both the training sample (R^2=0.29) and the holdout sample (R^2 = 0.22). Therefore, Model 4 can be used to predict values for new performance cases.

4.4 Common Method Bias

The use of self-reported data, while common in family business research, may lead to bias. We employed a procedural remedy by gathering performance information from two key informants: a family manager and a non-family manager. Research has shown that if the key informants in a business are senior enough to be highly involved in decision making, they will provide reliable and valid data that is not significantly different from objective data (Dayan & Di Benedetto, 2010; Zahra & Covin, 1993).

In addition, a Harman one-factor test (Podsakoff & Organ, 1986) was performed on the six main variables (all FIBER dimensions and managerial capabilities) to determine whether common method bias was a potential limitation. Results from this test showed that all six factors were present and that the most covariance explained by one factor was 20.23%. Moreover, we included a common method factor in the PLS model whose indicators included all the principal constructs, and calculated each indicator's variances that were substantively explained by the principal construct (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). The average substantively-explained variance was 0.56; while the average method-based variance was 0.026, and most method factor loadings were not significant. These results indicate that common method bias is not a serious concern in this study.

5. Discussion and Implications

We found support for three of the five hypotheses (i.e., H1b, H1c, and H1d) concerning the relationships between FIBER dimensions and managerial capabilities. Specifically, three FIBER

dimensions (identification of family members with the firm, binding social ties, and emotional attachment of family members) were significantly positively related to managerial capabilities, consistent with the corresponding hypotheses. The results imply that family SMEs can overcome the liability of their small size by drawing on the SEW endowment, specifically from these three dimensions. The results are consistent with a recent study (Helfat & Martin, 2015), which examined the antecedents of managerial capabilities and found that three resources were found to be significantly related to managerial capabilities: managerial cognition, social capital, and human capital. Our study confirms the influential role of social capital and identifies two additional resources unique to family SMEs: the identification of family members with the firm and emotional attachment. This suggests there are similarities between family SMEs and other firms in terms of factors that influence managerial capabilities. There are also some antecedents that are particularly important in the family firm context.

We also found support for H2, confirming a significantly positive relationship between managerial capabilities and performance. This finding is also consistent with previous studies on family firms (e.g., Miller et al., 2009; Agyapong et al., 2016). Our results highlight the importance of managerial capabilities in family SMEs, which are often constrained by resource acquisition and utilization (Williamson, Cable, & Aldrich, 2002).

Finally, we find partial support for H3, revealing that managerial capabilities mediate the relationships between the three significant FIBER dimensions and performance. Identification of family members with the firm had a negative relationship with performance, but this relationship was partially mediated by managerial capabilities. This finding implies that when managers are focused on protecting the family firm's reputation or on belonging to the firm, it may detract from firm performance, but this effect can be offset by managerial capabilities. Family SMEs that can investigate, choose, and deploy resources and capabilities effectively will benefit from

identification with the family firm. Managerial capabilities also partially mediate the relationship between binding social ties and performance. Consistent with the findings of Chung et al. (2016), social capital is derived from extensive, long-term networks, and stakeholder engagement enhances performance when a firm possesses high managerial capabilities. The empirical results also show that managerial capabilities fully mediate the relationship between the emotional attachment of family members and performance. Family members with intense emotional attachment to the firm will usually exhibit higher capabilities because they invest most of their time and interest in the firm, thus improving the firm's performance. These findings highlight the crucial role of managerial capabilities in family SMEs.

This study contributes to the theoretical literature in several ways. First, it confirms the particular applicability of SEW to family SMEs in the Arab Middle East. There are huge differences in family businesses across cultures, religions, and legal systems (Randerson, Dossena, & Fayolle, 2016). The endowments of family identification, social capital, and emotional attachment in this study could be explained by the *Assabiyah* culture and *Bedouin* living style dominant in Arab society, where these dimensions are important for survival and development of abilities in a family business. Hence, our study on family SMEs in the United Arab Emirates fulfills the call of Nordqvist and Melin (2010) by broadening the geographical and cultural base of family business research. To our knowledge, this is one of the first efforts to explore the outcomes of SEW in this region.

This study also recognizes the mediating influence of managerial capabilities on the relationship between SEW and performance, which had not been examined previously. Newbert and Craig (2017) recently proposed using SEW theory to shift the focus from "I" (the family) to "We" (the non-family stakeholders). The mediating relationship between binding social ties, managerial capabilities, and performance proves that SEW is not just an end in itself, but also an

antecedent to a more socially desirable end, the "We." Interactions that aim not only to preserve family SEW but also consider the interests of non-family stakeholders can result in economic gains.

Our findings enrich the current literature by developing "theory/ies of family firms" (Sharma, 2004) that consider the intersection between family and business systems. We find that SEW should not be viewed as a barrier to business performance and growth (Gómez-Mejía et al., 2007; Laffranchini et al., 2018), but rather as a catalyst for better performance, especially in the presence of managerial capabilities.

Our study has several practical managerial implications as well. We find three of the five FIBER dimensions positively influence managerial capabilities: family identification, social ties, and emotional attachment. Managers of family SMEs can learn from these results and exploit the advantages of the three dimensions to leverage managerial talent within the firm. For instance, senior management can promote identification with the family business by promoting values and cultures that are unique to the firm. Furthermore, encouraging strong emotional attachment to the family firm can reinforce employees' commitment and sense of responsibility and contribute to the firm's long-term success. Promoting identification with and attachment to the firm also has the benefit of discouraging actions that could damage the firm's performance. In addition, cultivating internal and external social connections with stakeholders may reduce employment costs. As a final observation, managers of family SMEs are encouraged to develop long-term relationships with customers and suppliers, as these relationships can serve as a tremendous resource for improving managerial capabilities.

6. Limitations and Future Research

Despite its contributions, this study is not without limitations. The sample of 150 family firms is small; thus, caution should be exercised when generalizing the results. Future research efforts should focus on obtaining data from a larger sample of family businesses, which would provide

opportunities for more appropriate comparisons and better generalizability of the results. In addition, the firms were all drawn from one cultural context. As noted earlier, three of the five FIBER dimensions were found to be significant antecedents to managerial capabilities. This finding could be a result of the Arab culture and style of living. Quite possibly, in different cultures, other FIBER dimensions would serve as significant antecedents. Future studies could replicate this research in other cultures or undertake cross-cultural comparisons. Finally, this study uses only a financial measure (ROA) as the dependent variable. It would be interesting to see whether the results using other performance variables such as growth, product innovation, and so on would be similar.

Our study opens a new avenue of research into the importance of managerial capabilities in family businesses. More investigation of other antecedents of these capabilities is needed. Future research could also further define managerial capability by identifying and differentiating components such as expertise and communication. Many studies have identified an intergenerational influence in the way family businesses perform (Kellermanns, Eddleston, Sarathy, & Murphy 2012; Marchisio, Mazzola, Sciascia, Miles, & Astrachan 2010). Thus, a longitudinal study using SEW dimensions as a potential research path could also yield meaningful insights.

In conclusion, we argue that SEW is still under-represented in family business research and that the effect of family endowments on commercial business activity should not be overlooked. The family firm is the most common business model in the world. Therefore, it is a key driver of venture creation, job opportunities, and the economic development of nations. Our results suggest a complex interaction between SEW dimensions, managerial capabilities, and family firm performance. While our results are encouraging, more research is needed to obtain a fuller

theoretical understanding of SEW as an antecedent for strategic behaviors.in entrepreneurial and business settings.

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Tables & Figures

Table 1: Characteristics of the Survey Sample

Education	Members	Non-Members	*Respondents' Age*	Members	Non-Members
High School	26%	18%	20 to 30	10%	15%
Bachelor	40%	45%	31 to 40	25%	33%
Master	34%	35%	41 to 50	35%	27%
PhD	0%	2%	More than 50	30%	25%
Enterprise Age (years)			*No. of Employees*		
0 to 10	30.60%		0 to 50	9.00%	
11 to 20	33.60%		51 to 100	36.60%	
21 to 30	20.10%		101 to 150	44.80%	
More than 31	15.70%		151 to 250	9.70%	
Venture Life Cycle Phase					
Start-Up	11%		Mature	29%	
Growing	43%		Decline	17%	
Industry Type			*Generation*		
Manufacturing	27%		First	21%	
Construction	22%		Second	32%	
Wholesale	19%		Third	27%	
Retail	18%		Fourth	17%	
Service	16%		Higher	3%	
Primary Product					
Industrial	34%	Consumer	45&	Both	21%

Table 2: Reliability and validity test for the complete data

Constructs	Indicators	Outer Loadings	α	CR	AVE
Family Control and Influence (FCI)	FCI1. The majority of the shares in my family business are owned by family members.	0.773	0.848	0.889	0.616
	FCI2. In my family business, family members exert control over the company's strategic decisions.	0.816			
	FCI3. In my family business, most executive positions are occupied by family members.	0.781			
	FCI4. In my family business, nonfamily managers and directors are named by family members.	0.705			
	FCI5. The board of directors is mainly composed of family members.	0.842			
Identification of family members (IFM)	IFM1. Family members have a strong sense of belonging to my family business.	0.810	0.847	0.891	0.622
	IFM2. Family members feel that the family business's success is their own success.	0.869			
	IFM3. My family business has a great deal of personal meaning for family members.	0.812			
	IFM4. Being a member of the family business helps define who we are.	0.663			
	IFM5. Family members are proud to tell others that we are part of the family business	0.775			
Binding social ties (BST)	BST1. My family business is very active in promoting social activities at the community level.	0.798	0.767	0.850	0.587
	BST2. In my family business, nonfamily employees are treated as part of the family.	0.749			
	BST3. In my family business, contractual relationships are mainly based on trust and norms of	0.786			
	BST4. Building strong relationships with other institutions (i.e. other companies, professional	0.730			
Emotional attachment of family members (EAFM)	EAFM1. Emotions and sentiments often affect decision-making processes in my family business.	0.640	0.753	0.826	0.489
	EAFM2. Protecting the welfare of family members is critical to us, apart from personal	0.734			
	EAFM3. In my family business, the emotional bonds between family members are very strong.	0.654			
	EAFM4. In my family business, affective considerations are often as important as economic	0.672			
	EAFM5. Strong emotional ties among family members help us maintain a positive self-concept.	0.787			
Renewal of family bonds (RFB)	RFB1. Continuing the family legacy and traditional is an important goal for my family business.	0.773	0.678	0.803	0.507
	RFB2. Family owners are less likely to evaluate their investment on a short-term basis.	0.783			
	RFB3. Family members would be unlikely to consider selling the family business.	0.623			
	RFB4. Successful business transfer to the next generation is an important goal for family members.	0.655			
Managerial capabilities (MC)	MC1. The firm's managers resolve conflicting opinions, improve coordination and effective collaboration between key executives, generate enthusiasm and motivate the management unit sufficiently to enhance performance.	0.607	0.824	0.869	0.488
	MC2. The firm's managers develop a system of strategic plans throughout the organization that is effective for the organization's general development.	0.634			
	MC3. The firm's managers develop training programs for the organization's members.	0.695			
	MC4. The use of management by objectives has increased in the firm.	0.723			
	MC5. The use of financial accountability reporting has increased.	0.787			
	MC6. The participation of top and intermediate managers in the decision-making process has	0.721			
	MC7. The extensive, effective use of quantitative techniques in decision making has increased.	0.708			

Table 3: Measurement model. Discriminant validity.

	Fornell-Larcker Criterion														Heterotrait-monotrait ratio (HTMT)											
	Mean	SD	Age	GEN	Size	VLC	NFM	FCI	IFM	BST	EAFM	RFB	MC	PERF		Age	GEN	Size	VLC	NFM	FCI	IFM	BST	EAFM	RFB	MC	PERF
Age	32.46	12.77	**1**												Age												
GEN	2.33	1.04	-0.035	**1**											GEN	0.035											
Size	88.3	32.12	0.315	-0.051	**1**										Size	0.315	0.051										
VLC	2.25	0.75	0.059	0.053	-0.132	**1**									VLC	0.059	0.053	0.132									
NFM	2.52	1.07	0.353	0.076	0.062	-0.065	**1**								NFM	0.353	0.076	0.062	0.065								
FCI	3.77	0.71	-0.192	0.005	-0.124	0.099	-0.148	**0.785**							FCI	0.201	0.070	0.149	0.082	0.151							
IFM	4.03	0.6	-0.206	-0.021	-0.263	0.096	-0.071	0.392	**0.789**						IFM	0.211	0.089	0.277	0.113	0.080	0.450						
BST	3.81	0.55	-0.172	0.027	-0.225	0.066	-0.126	0.348	0.654	**0.766**					BST	0.192	0.057	0.250	0.120	0.143	0.433	0.803					
EAFM	3.56	0.68	-0.219	-0.047	-0.104	-0.175	-0.066	0.325	0.37	0.396	**0.700**				EAFM	0.253	0.075	0.155	0.172	0.104	0.405	0.454	0.527				
RFB	3.88	0.56	-0.193	-0.034	-0.112	0.063	-0.242	0.493	0.498	0.494	0.472	**0.712**			RFB	0.220	0.089	0.121	0.077	0.291	0.644	0.659	0.694	0.643			
MC	3.92	0.48	-0.068	-0.106	-0.134	0.01	0.062	0.225	0.471	0.446	0.382	0.279	**0.699**		MC	0.099	0.180	0.146	0.150	0.074	0.246	0.555	0.550	0.422	0.363		
PERF	3.53	0.65	0.028	0.079	-0.269	0.097	0.081	0.22	0.193	0.313	0.229	0.313	0.372	**0.813**	PERF	0.055	0.113	0.385	0.139	0.149	0.409	0.306	0.517	0.388	0.518	0.580	

Notes = GEN: Generation; VLC: Venture life cycle; NFM: Number of family members currently working in the firm; FCI: Family control and influence; IFM: Identification of family members; BST: Binding social ties; EAFM: Emotional attachment of family members; RFB: Renewal of family members bonds; MC: Managerial capabilities; PERF: Performance.

Table 4. Summary of mediating effect tests

Total effects on performance (Model 1)					Direct Effects on performance (Model 3)					Indirect Effects on performance (Model 3)					
			BCCI					BCCI					BCCI		
	Path	*t*	Lower	Upper		Path	*t*	Lower	Upper		Path	*t*	Lower	Upper	Sig
FCI (*c*)	0.178*	1.416	0.058	0.280	H1a: FCI (*c'*)	0.161^{ns}	1.021	0.010	0.327	H3: FCI: a_1b_1 (via MC)	-0.014^{ns}	0.383	-0.058	0.030	No
IFM (*c*)	-0.148^{ns}	1.201	-0.342	-0.064	H1b: IFM (*c'*)	-0.224**	1.902	0.178	0.417	H3: IFM:a_2b_1 (via MC)	0.100***	2.729	0.050	0.143	Yes
BST (c)	0.225**	2.03	0.110	0.384	H1c: BST (*c'*)	0.183*	1.504	0.017	0.323	H3: BST: a_3b_1 (via MC)	0.062*	1.288	0.009	0.128	Yes
EAFM (c)	0.073^{ns}	0.801	-0.088	0.153	H1d: EAFM (*c'*)	-0.016^{ns}	0.185	0.075	0.371	H3: EAFM: a_4b_1 (via MC)	0.069*	1.573	0.020	0.125	Yes
RFB (c)	0.194*	1.471	0.050	0.379	H1e: RFB (*c'*)	0.182*	1.575	0.030	0.322	H3: RFB: a_5b_1 (via MC)	-0.019^{ns}	0.450	-0.073	0.031	No
Control variables															
GEN	0.058^{ns}	0.804	-0.028	0.154											
VLC	0.055^{ns}	0.694	-0.047	0.156											
Age	0.150^{ns}	1.277	-0.003	0.303											
Size	-0.242^{ns}	1.217	-0.423	0.075											
NFM	0.136*	1.449	0.039	0.279											

Notes = GEN: Generation; VLC: Venture life cycle; NFM: Number of family members currently working in the firm; FCI: Family control and influence; IFM: Identification of family members; BST: Binding social ties; EAFM: Emotional attachment of family members; RFB: Renewal of family members bonds.

ns = not significant based on *t* (4999), one-tailed test; * p < 0.10 = significant based on *t* (1.282, 4999), one-tailed test; ** p < 0.05 = significant based on *t* (1.646, 4999), one-tailed test; *** p < 0.01 = on *t* (2.33, 4999), one-tailed test.

Table 5: Research hypotheses and testing results.

Hypotheses	Description	Results	Hypothesis confirmation
H1a	Family control and influence → Managerial capabilities (-)	Not significant	Not supported
H1b	Identification of family members → Managerial capabilities (+)	Significant	Supported
H1c	Binding social → Managerial capabilities (+)	Significant	Supported
H1d	Emotional attachment → Managerial capabilities (+)	Significant	Supported
H1e	Renewal of family bonds → Managerial capabilities (-)	Not significant	Not supported
H2	Managerial capability → Financial performance (+)	Significant	Supported
H3	Family control and influence → Managerial capabilities → Financial performance	Not significant	Not supported
H3	Identification of family members → Managerial capabilities → Financial performance	Significant	Supported [partial mediation]
H3	Binding social → Managerial capabilities → Financial performance	Significant	Supported [partial mediation]
H3	Emotional attachment → Managerial capabilities → Financial performance	Significant	Supported [full mediation]
H3	Renewal of family bonds → Managerial capabilities → Financial performance	Not significant	Not supported

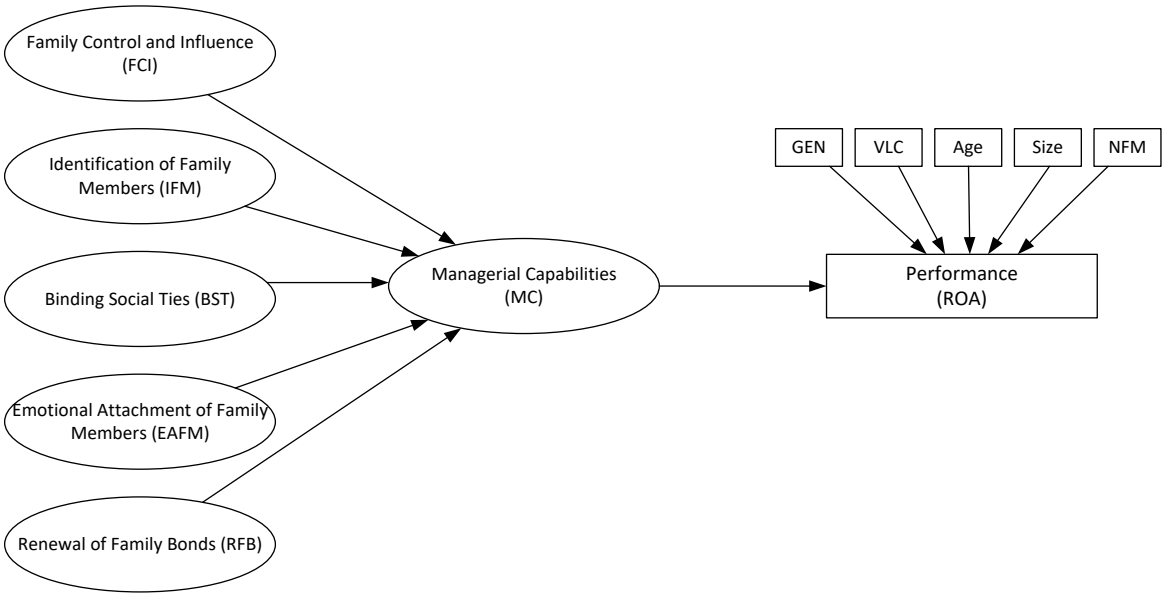

Figure 1: Proposed research model: mediation illustrating the relations among FIBER's dimensions, managerial capabilities and financial performance. *Note* = GEN: Generation; VLC: Venture life cycle; NFM: Number of family members currently working in the firm.

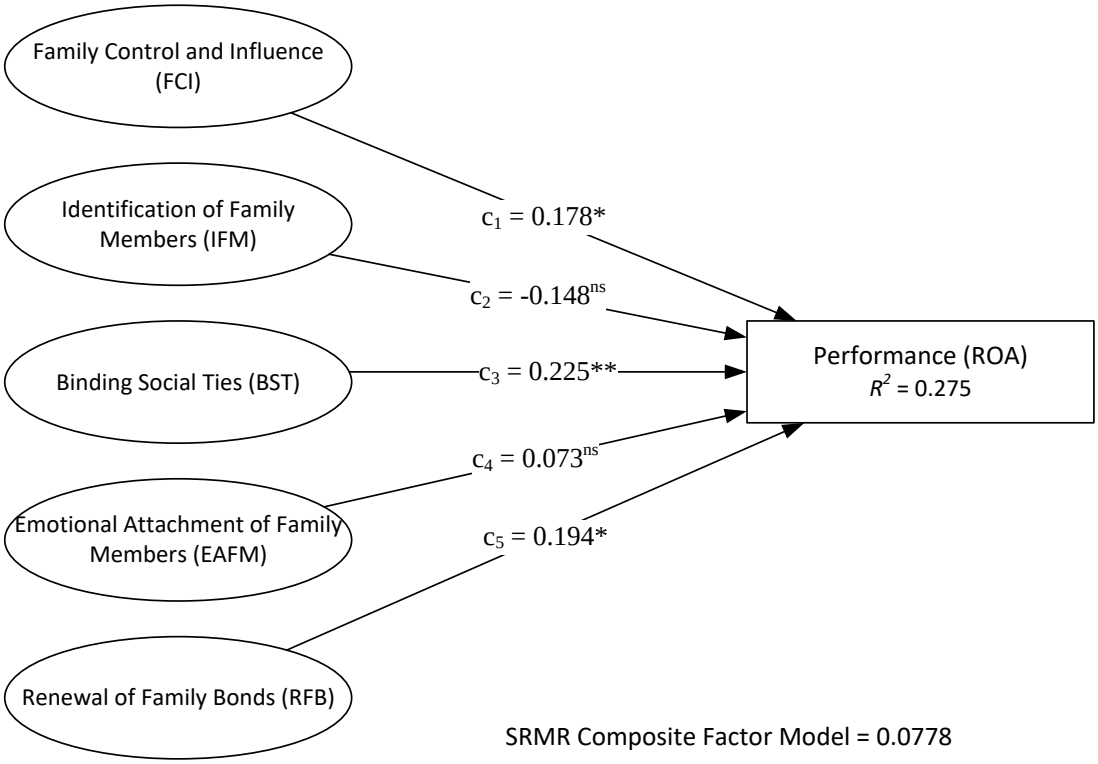

Figure 2. Results of model with total effects illustrating the relationships between FIBER dimensions and performance (Model 1). The values in the figure represent standardized coefficients. Paths between indicators, latent variables, and control variables are excluded for clarity. *p < .10. **p < .05, ***p < .01 (one-tailed).

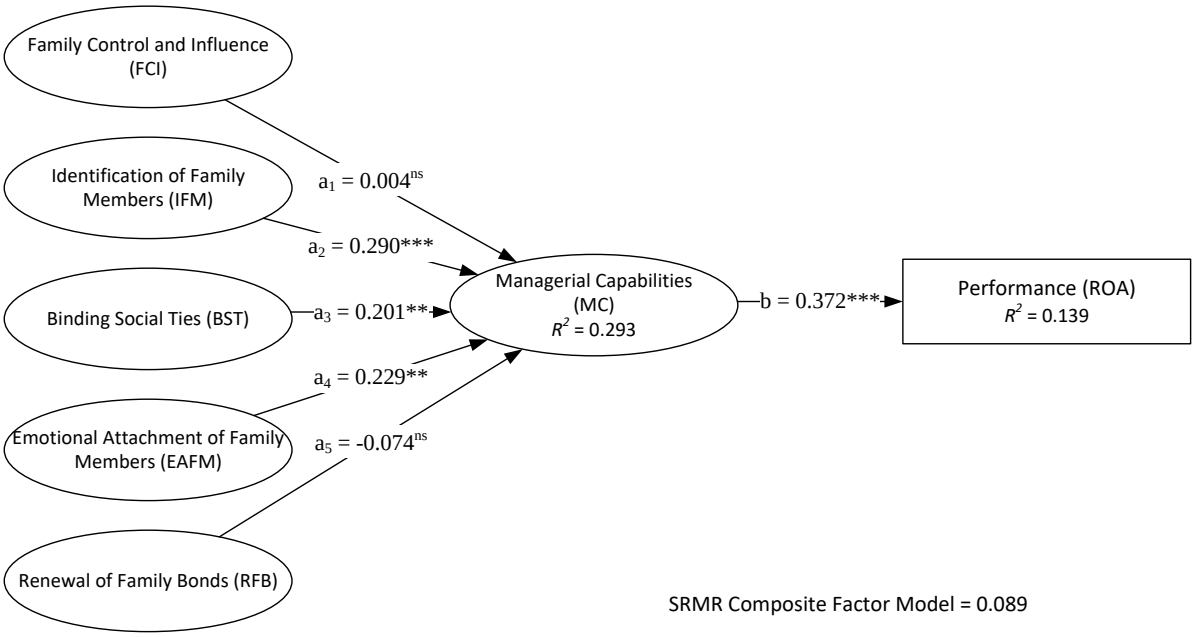

Figure 3. Results of fully mediated model illustrating the relationships among FIBER dimensions, managerial capabilities and performance (Model 2). The values in the figure represent standardized coefficients. Paths between indicators, latent variables, and control variables are excluded for clarity.*p < .10. **p < .05, ***p < .01 (one-tailed).

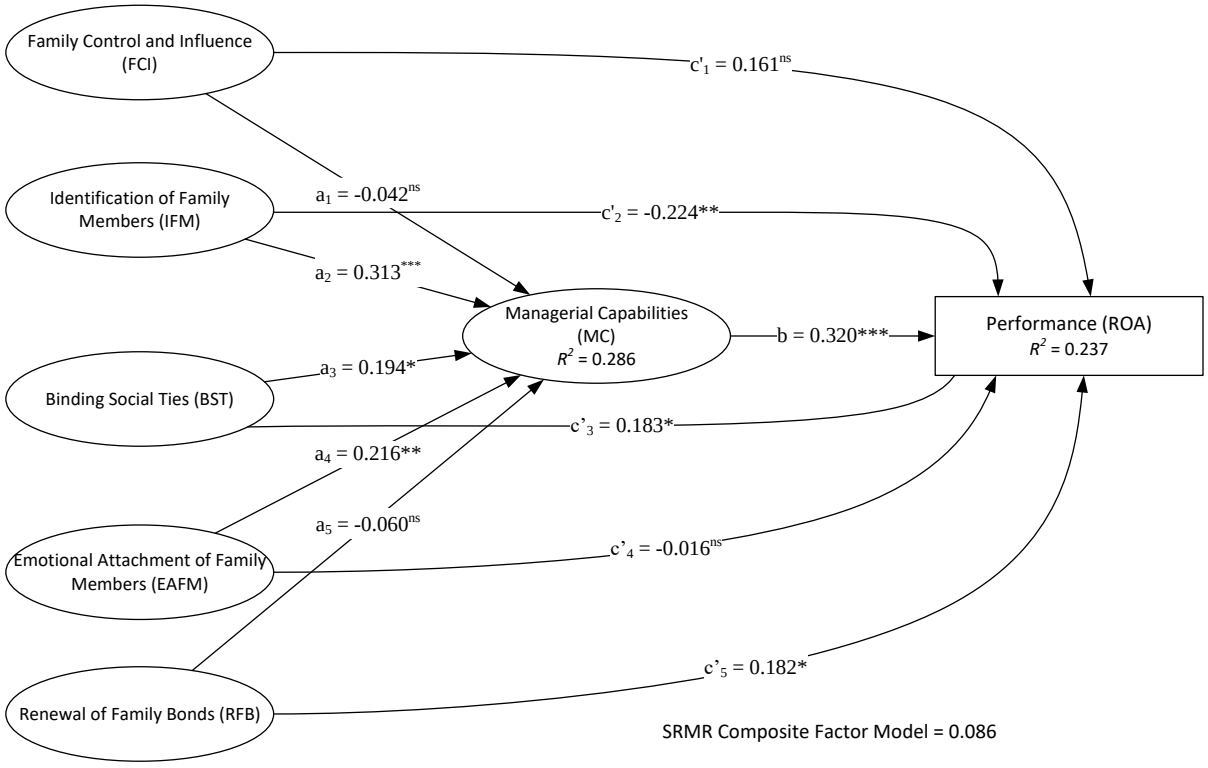

Figure 4. Results of partially mediated model illustrating the relationships among FIBER dimensions, managerial capabilities and performance (Model 3). The values in the figure represent standardized coefficients. Paths between indicators, latent variables, and control variables are excluded for clarity.*p < .10. **p < .05, ***p < .01 (one-tailed).

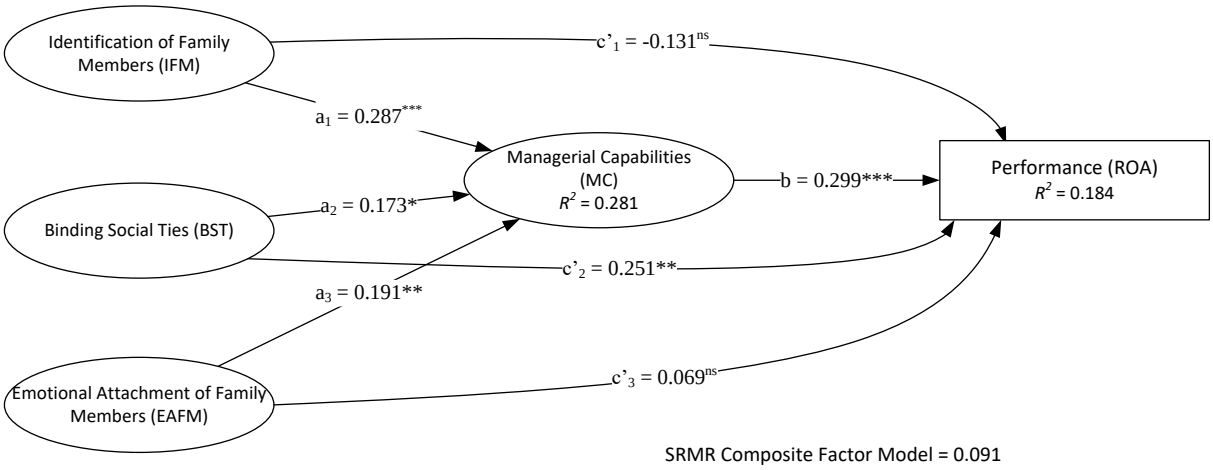

Figure 5. Results of partially mediated model illustrating the relationships among FIBER dimensions, managerial capabilities and performance (Model 3). The values in the figure represent standardized coefficients. Paths between indicators, latent variables, and control variables are excluded for clarity.*p < .10. **p < .05, ***p < .01 (one-tailed).