The efficacy of market sensing and family-controlled board in the new product development performance of family firms in emerging market

ABSTRACT

A call has recently been made for scholarly research aimed at understanding how family-owned firms can enhance their performance. Only a handful of studies have hitherto examined the capabilities of such firms in relation to innovation-related outcomes. In addition to this gap, past studies have examined either the mediation or moderation model, which has not fully elucidated the essence of how these firms can improve their new product development performance. By addressing these critical gaps by using survey data collected from 253 family-owned small-medium enterprises (SMEs) based in the UAE, we found that market sensing capabilities mediate the influence of socio-emotional wealth on new product performance. Such mediated influence has also been found to be positively moderated when a firm's board is controlled by family members. Our conceptual model is underpinned by the dynamic capability and upper echelons theoretical perspectives. Our findings offer useful insights for both practice and theory.

Keywords: *socio-emotional wealth; market sensing; family control; non-family control; dynamic capability; new product development performance*

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1. Introduction

The established standing of family-owned firms in different economies has prompted scholarly research aimed at investigating the conditions under which such firms' performance can be enhanced (Hernández-Perlines et al., 2021; Hernández-Perlines et al., 2019; Hernández-Perlines et al., 2017). In this regard, scholars have proven that the socio-emotional wealth (hereafter, SEW) possessed by these firms is a unique characteristic that contributes to their superior performance. SEW is defined as an *"affect-related value that a family derives from controlling its position in a firm"* (Berrone et al., 2012, p. 259).

Despite the burgeoning literature on the topic, the findings of the studies that have examined SEW and its performance-related outcomes have been contradictory and inconclusive. For example, Berrone et al. (2010) argued that family-owned firms engage less in environmental-related activities than non-family-owned ones in order to preserve their SEW. The authors did not relate SEW to performance outcomes because many studies had already confirmed the positive effects of environmental-related activities on firm performance (Ağan et al., 2016; Gupta & Gupta, 2020). Hence, their study merely hints at the fact that SEW may contribute positively to firm performance. Conversely, Gómez-Mejía et al. (2007) argued that family-owned firms prioritize the perpetuation of their SEW, consequently placing less emphasis on profitability. Limited studies have related SEW to financial performance (Alonso-Dos-Santos & Llanos-Contreras, 2019; Dyer, 2018; Glover & Reay, 2015; Hernández-Perlines et al., 2021) and to family-owned firms' propensity to take risks (Gomez-Mejia et al., 2011). Besides the inconclusive findings of these studies, there is a significant theoretical gap in linking SEW specifically to innovation-related outcomes (e.g., new product development performance) and to the conditions under which family-owned firms can enhance new product performance. To address these critical gaps, the first objective of our

study was to answer the following question: "*Does SEW positively influence new product performance in family-owned firms?*"

In addition to the gaps outlined above, little scholarly work has applied the dynamic capability perspective (Teece et al., 1997)—*how well the dynamic capabilities of a firm help to reconfigure its existing resource base to deal with a dynamic condition*—in understanding the theoretical phenomenon of family-owned firms. A call has recently been made to extend the dynamic capability perspective to understand the key capabilities that can contribute to the performance outcomes of family-owned firms (Daspit et al., 2019), in particular, the drivers of innovation-related outcomes (Park et al., 2019). At the same time, in the business management literature, marketing sensing—*the dynamic capability of the firm to acquire market knowledge*—has been identified as a unique capability that facilitates the development of innovative products for performance (Zhou et al., 2019). Berrone et al. (2012) acknowledged that the preservation of family values fosters a firm's commitment to learning and capability development. In this regard, SEW represents the main frame of reference for strategic actions (Berrone et al., 2012). Hence, it may be plausible that SEW may be able to influence new product development performance (hereafter, NPD performance) via the mediating role of the market sensing capability. Thus, our study attempted to answer another critical question: "*Does SEW influence NPD performance via market sensing capability?*"

Another critical gap found in the family firm literature pertains to the boundary conditions for effective performance. In this regard, scholars have examined the role played by different compositions of top management teams in the innovation-related outcomes of family-owned firms; however, these studies have also yielded mixed results. For example, Duran et al. (2016) compared family-owned and non-family-owned firms and found that the former tend to invest less in innovation but have an increased conversion rate of innovation input to output. Furthermore, they found that this effect is stronger when the CEO of the firm is a later generation family member. Conversely, family ownership has been observed to

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have a negative impact on innovation (Decker & Günther, 2017). The degree of family involvement has been found to act as a moderating variable between entrepreneurial activities and performance outcomes (Casillas & Moreno, 2010). We argued that a moderating-mediating mechanism may provide a full picture in terms of *how family-controlled boards strengthen the indirect effect of SEW on NPD performance through the market sensing capability*. This theoretical phenomenon is underpinned by the upper echelons perspective, which argues that top management composition affects business activities (Hambrick & Mason, 1984); in such a context, scholars have called for an examination of the dynamics found in top-management teams (TMTs), and their connection with SEW and the enhancement of family-owned firm performance (Naldi et al., 2013). To the best of our knowledge, ours is among the few studies to have applied upper echelons theory to the family-owned firm context. In addition, it is the first study to have examined the moderating role played by board composition on the SEW and NPD performance perspective, considering the market sensing mediating mechanism. By doing so, it contributes useful insights to the extant literature.

Overall, the findings of our study make several important contributions to the current literature. First, they extend the literature on family-owned firms by integrating key insights drawn from the dynamic capability and upper echelons theories. Given the recent critical line of enquiry on how SEW contributes to new product development (Christofi, 2021), we applied the dynamic capability perspective to the end of offering fresh insights; we did so by highlighting an important capability that enhances the effect of SEW on the NPD performance of family-owned firms. In this respect, we recognized the dynamism expressed by family-owned firms through a market sensing mediating mechanism. This extends the current theoretical body of knowledge beyond static resource endowment to capability utilization (market sensing) in value creation activities (Barros et al., 2016; Sharma et al., 2014). Khan (2020) found that market sensing is influential in the marketing mix adaption. By testing the mediating mechanism of this capability, our study offers fresh insights into its

usefulness in NPD performance in the context of emerging market family-owned firms. Second, we applied the upper echelons theory to explain the boundary conditions (of family- vs. non-family-controlled boards) under which SEW can enhance NPD performance via the market sensing capability. By applying the upper echelons theory, our study adds value by offering new theoretical perspectives in the context of family-owned firms, and addresses calls made for research on the role played by CEO composition in SEW (Berrone et al., 2012; Kraiczy et al., 2015). By integrating the boundary conditions of family- vs. non-family-controlled boards, the findings of our study offer implications for governance-related issues in family-owned firms (Aguilera & Crespi-Cladera, 2012; Lubatkin et al., 2005), and for the differential effect of non-family-controlled boards on NPD performance (García-Ramos & García-Olalla, 2011). In the United Arab Emirates (UAE), scholars have called for work aimed at resolving the governance issues found in family-owned firms in relation to dealing with performance-related challenges (Bodolica et al., 2015). In this market, family members usually hold high levels of ownership in businesses, which makes them the most influential stakeholders and shapes board composition (Samara, 2020). Hence, it is critical to examine whether family- vs. non-family-controlled boards may have differential effects on NPD performance via dynamic capabilities. Overall, our study makes a novel contribution by enhancing our understanding of the role played by the market sensing capability in family- vs. non-family-controlled board conditions. In doing so, it contributes to the body of knowledge pertaining to the particular governance conditions under which dynamic capability has a greater efficacy in NPD performance in family-owned firms.

Methodologically, the moderating-mediating mechanism provides deeper insights into the effectiveness of the conceptual phenomenon by shedding light on the underlying capabilities and boundary conditions that enhance NPD performance in family-owned firms. Contextually, we contribute by examining the underexplored context of family-owned small and medium-sized enterprises (SMEs) based in the UAE.

From the managerial perspective, the managers of family-owned firms not only have to preserve their SEW—which is indeed a unique non-financial resource for value creation—but also have to pay greater attention to the vital capabilities suited to enhancing the value of non-financial resources for NPD performance. By leveraging such unique capabilities, managers can turn SEW into effective value creation. Second, family-owned firms should be careful in selecting non-family board members in consideration of board diversity in order to enhance the effects of SEW and capabilities on family-owned firms' NPD performance. Last, given the strong impact of the presence of family members on the board, managers need to nurture and preserve family resources for better performance.

2. Conceptual Background and Hypotheses Development

2.1 The influence of socio-emotional wealth on the new product performance of family-owned SMEs

Family-owned firms are known for operating in unique phenomenological settings. Conceptualized as an *"affect-related value that a family derives from controlling its position in a particular firm"* (Berrone et al., 2012, p. 259), SEW has been identified as an attribute and endowment unique to family-owned firms. Gómez-Mejía et al. (2007) developed a SEW theoretical model suited to explain the behaviours of such firms. In view of the behavioural and agency theories, scholars have argued that these firms are strongly committed to protecting their SEW mainly due to the underlying theoretical assumption that firms make strategic choices subject to the reference point of their dominant owners. This phenomenon underlines how family firm owners make decisions aimed at preserving non-financial aspects or 'affective endowments' (Berrone et al., 2012). For example, if a family firm encounters any risk to its endowment, any decisions made are motivated by a desire to protect it, as opposed to gaining financial returns. Hence, SEW is a distinct trait of family-owned firms that highlights the unconstrained power held by family members. Scholarship has also asserted that SEW is deeply rooted in the psychological and intrinsic values of the family members' identities, which they associate with the firm (Berrone et al., 2010).

Although some scholarly research has linked SEW with firm performance (Alonso-Dos-Santos & Llanos-Contreras, 2019; Dyer, 2018; Glover & Reay, 2015; Hernández-Perlines et al., 2021), there is still a considerable gap in our understanding of the role played by the SEW of family-owned SMEs in NPD performance. In the context of our study (the UAE), the SME sector accounts for 92% of the total GDP. According to the Middle-East family business survey conducted by PwC (2019), family businesses contribute 60% of the GDP. This implies that family SMEs make a significant contribution to the country's economy, which is in line with the Forbes (June 2020) report. The PwC (2019) survey also mentions that the Dubai Chamber of Commerce has been supporting family-owned SMEs (hereafter, F-SMEs) in consideration of their sizable growth (Delioitte, 2017).

According to Mohammed (2019), UAE SMEs are focussed on continuous innovation and development, and this is also the case for F-SMEs (PwC, 2019). As mentioned above, scholars have confirmed that, compared to their non-family-owned counterparts, family-owned firms invest less in innovation but have an increased conversion rate of innovation input to output (Duran et al., 2016). Another study that involved a systematic analysis of articles on technological innovation found a direct influence of family involvement on innovation related activities (De Massis et al., 2013). Consistently, family owned firms have been positively linked to innovation-related activities due to their owners' sensitivity to reputation (Bammens & Hünermund, 2020). Specifically, SEW has been related to product-diversification (Bloch et al., 2012) and capital efficiency (Ramírez et al., 2020). Research also shows that family business group affiliates—the establishment of which arguably increases SEW—have a positive effect on R&D investment (Min, 2021). These studies hint at a positive relationship between SEW and the NPD performance of F-SMEs. Hence, against the backdrop of the SEW literature, we speculated that:

H1: *Socio-emotional wealth is positively related to the new product development performance of family-owned firms.*

2.2 The mediating impact of market sensing capabilities on new product performance in family-owned SMEs

SEW does not always enhance the performance of family-owned firms; there could therefore be additional underlying mechanisms that can shape the impact of SEW on firm performance. Earlier studies find both positive (Alonso-Dos-Santos & Llanos-Contreras, 2019; Dyer, 2018) and negative impacts of SEW on performance (Kellermanns et al., 2012; Memili et al., 2020), which suggests that we need to pay greater attention to the underling mediating mechanisms in order to gain a better understanding of the means through which SEW influences family-owned firm performance. To address this gap, we zoomed in on one of the vital mechanisms—i.e., the market sensing capability—that may enhance the impact of SEW on NPD performance.

Dynamic capabilities are different from routine ones (Schilke et al., 2018) in that the former are used to reconfigure resources in order to help a firm align with a dynamic environment (Teece et al., 1997). Capabilities consist of a firm's intangible resources and can be defined as *"complex bundles of skills and collective learning, exercised through organizational processes, that ensure superior coordination of functional activities"* (Day, 1994, p. 38). As such, capabilities, which are central to developing a sustainable competitive advantage, are deeply rooted in firms and develop over time (Helfat & Martin, 2015). It has been established that capabilities enable value creation through innovation as the existing advantages lose relevancy (Lepak et al., 2007). This value creation is often pursued by seeking external knowledge and transforming the acquired one for strategic purposes (e.g., product development) (Khan, 2020; Zhou et al., 2019). On a similar notion, a recent study has hinted that firm familiness may influence innovation performance via absorptive (dynamic) capabilities (Daspit et al., 2019).

Market sensing—*a key capability of the business to obtain market knowledge*—has been defined as a dynamic capability that is often related to product innovation, adaptation, and development (Khan, 2020; Zhou et al., 2019). Firms with market sensing capabilities are

often more responsive to external environment conditions and are more likely to succeed in new product development (Liang & Frösén, 2020; Weerawardena et al., 2015). Day (1994) highlighted that new product development is a critical activity that must be informed by market sensing. Family-owned firm scholarship acknowledges that the preservation of family values fosters a firm's commitment to learning and capability development (Berrone et al., 2012). In this regard, SEW represents a main frame of reference for strategic actions (Berrone et al., 2012). Hence, it can be argued that SEW may be positively related to market sensing. As family members are closely involved in managing the day-to-day operations of family-owned firms (Campopiano & De Massis, 2015; Gomez-Mejia et al., 2011; Hoffman et al., 2006), they are in a better position to sense any marketing opportunities for new product and service offerings. The involvement of family members—and their presence on the board—leads to greater control over the business's affairs, and the preservations of SEW will enhance such firms' market sensing capabilities. A greater market sensing capability will attenuate the effect of SEW on new product development performance in family-owned firms.

Dynamic capabilities are important for firms to sense and seize market opportunities. Through such capabilities, firms can effectively deploy and leverage their resources for superior performance (Teece, 2007; Teece et al., 1997). In fact, prior research pays particular attention to the role played by the market-sensing capability as a mediator between an organization's resources and its innovation performance (Fang et al., 2014; Lin et al., 2020). Hence, by utilizing their dynamic capabilities, family-owned firms may be able to effectively deploy their SEW to improve their NPD performance. Firms commonly capitalize on market sensing to understand current and latent market needs, which feed into new product development processes and performance (Kostopoulos et al., 2011). This is in line with the view that family-owned firms are distinct from non-family-owned ones based on their willingness and ability to innovate (Chrisman et al., 2015). Against, this backdrop, we

speculated that market sensing may mediate the effects of SEW on new product development performance, which led us to posit that:

H2: *Market sensing capabilities mediate the effect of socio-emotional wealth on family-owned firms' new product development performance.*

2.3 The moderating role played by family- vs. non-family-controlled boards

A review of the family-owned firm literature suggests that the strategic actions of such firms are driven mainly by the preservation of their SEW, even at the cost of profitability. Hence, it is vital to understand the conditions under which their SEW can be more influential in enhancing performance. Given the differential influence of board composition in firms, some studies have called for the introduction of a board of directors selected from outside the family. They have motivated this call with reasons such as experience and the ability to provide alternative perspectives and to bring to the table information and valuable knowledge that a family-owned firm could not otherwise access (Addae-Boateng et al., 2014; Johannisson & Huse, 2000). On a similar note, Randolph et al. (2021) found that reliance on non-family management is a primary source of knowledge diversity in family-owned firms. Le Breton–Miller and Miller (2006) argued that family CEOs need to be long-sighted in regard to investments. Non-family directors are better able to enhance firm value as they are more capable of management (Herdhayinta et al., 2021). Conversely, family CEOs have also been associated with superior performance (Minichilli et al., 2010; Villalonga & Amit, 2006). In the context of F-SMEs, a greater presence of family members in the TMTs has been positively related to performance (González-Cruz & Cruz-Ros, 2016; Lwango et al., 2017). However, the findings of these studies can be deemed inconclusive due to their testing of either direct or moderated relationships.

Family vs. non-family social capital has been linked with innovation. In this regard, a negatively moderating effect has been confirmed for family ownership (Sanchez–Famoso et al., 2015). Conversely, recent research has argued that family firm board chairs invest more in R&D activities (Jiang et al., 2020). Similarly, Calabrò et al. (2021) showed that the ratio of

family vs. non-family board members positively moderates the relationship between human capital and family-owned firm innovativeness; i.e., the relationship is stronger when such ratio is high—unless family-owned firms have a multi-generational involvement. On the other hand, a negative impact of family ownership on innovation has also been found (Decker & Günther, 2017). There is also evidence that having a family member as CEO can be either detrimental or beneficial to reaping the performance benefits of entrepreneurial orientation, depending on the degree to which the board is engaged in serving the CEO (Bauweraerts et al., 2021). Therefore, whether family-controlled boards positively or negatively moderate the mediating influence of SEW on NPD performance via market sensing capability remains questionable, given that past studies have not taken into account the SEW perspective and the mediating mechanism of dynamic capability (i.e., in the context of this study, market sensing). This is in line with the argument that, in F-SMEs, the relationship of SEW with innovativeness may be contingent upon other factors, such as family configuration in the top management (Gast et al., 2018). Particularly in the context of the UAE, family members hold major stakes in family-owned businesses and are highly involved in their boards (Samara, 2020). Hence, it is important to examine whether non-family control may result in more fruitful outcomes in terms of NPD performance. In this regard, our study answers the recent call to extend theorization and research on family-owned firms in Arab countries (Krueger et al., 2021).

The upper echelons theoretical perspective postulates that TMT compositions affect business activities, with the impact of board risk-taking propensity on new product development being stronger when executive power is high (Hambrick, 2007; Hambrick & Mason, 1984). High levels of board discretion are reflected in strategic choices and outcomes. From this perspective, we speculated that family-controlled boards exert a positive moderation on the mediating mechanism of market sensing capability. By continuing to renew its product portfolio, a firm remains competitive and independent over time (Kraiczy et al., 2015). Non-family-controlled boards may take less risky decisions than family-led ones

in order to protect their private gains. Given the importance of SEW for family-owned firms, the presence of non-family members on the board may not create more value due to the agency problems arising from the mix of family and non-family members, which could create conflicts in relation to the strategic direction, consequently affecting performance. In order to preserve SEW, family-owned firms aspire to preserve their independence (Gómez-Mejía et al., 2007) and will be better positioned to integrate the tacit knowledge stemming from the involvement of several generations of family members and that obtained from the market. Thus, we proposed that:

H3: *Family control strengthens the indirect effect of socio-emotional wealth on new product development performance through the market sensing capability.*

3. Methodology

3.1 Study context and data collection

Family-owned enterprises contribute between 70% and 90% of the international GDP (Salvato & Aldrich, 2012) and make up no less than 67% of enterprises worldwide (FOBI, 2021). Among the Gulf Cooperation Council (GCC)[1] countries, F-SMEs represent more than 90% of the private sector and about 80% of non-oil GDP, and are responsible for more than 70% of the employment (Pierce, 2016). More specifically, in the UAE setting, 90% of private businesses are family-owned (Strike, 2012). On this basis, we argued that F-SMEs are of substantial importance to the UAE economy. Therefore, we gathered data from F-SMEs operating in Dubai, the UAE.

Following a previous study (Claver et al., 2007), we defined a family-owned firm as one in which the majority (51%) of the voting share is owned directly or indirectly by a family—i.e., a group of people related by marriage or blood (Chrisman & Patel, 2012; Del

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[1] The GCC is a regional body established in 1981 to promote economic cooperation and development in the Arabian Peninsula (Al-Shammari et al., 2008).

Bosco & Bettinelli, 2020). In addition, we defined SMEs as privately-owned firms with fewer than 250 employees (UAE, 2020).

The sampling frame of our study was derived from the directory of the Dubai Chamber of Commerce and Industry and Eye of Dubai. We adopted the following criteria to identify the appropriate firms: (1) firms that were family-owned; (2) firms that were independently owned and not part of any bigger group; (3) firms that had fewer than 250 employees; and (4) firms that frequently engaged in innovation. These criteria returned 615 F-SMEs for our study sample. Accordingly, 615 copies of our questionnaire were sent by email and hand delivery. The key respondents included business owners, chief executive officers (CEOs), R&D or innovation officers, and finance managers. Due to their heterogeneous nature, we assessed the respondents' competency levels by means of three questions: (1) their knowledge of the issues encompassed in the questionnaire; (2) their level of confidence in the provided answers; and (3) the extent to which their answers reflected the situation of their firms. After many rounds of visits to the F-SMEs and reminder emails, we received a total of 276 questionnaires. Twenty-three of these were incomplete, which left us with a sample of 253 usable questionnaires, providing a valid response rate of 41.14%.

3.2 Measures

Table 1 provides the measurement items used to operationalize our study's constructs. All the items were adopted from previous studies and, following DeVellis (2003), they were refined through in-depth interviews with scholars and by pre-testing the questionnaire with managers. The items were measured on a 7-point Likert-scale, except in the case of family control, in which the range of responses was coded as 0 and 1.

---- Insert Table 1 About Here ----

3.2.1   Socio-emotional wealth (SEW)

We operationalized SEW—which represents *"'an affective endowment' that is intrinsically attached to kinship ties*" (Cruz et al., 2012, p. 65)—by means of four items adopted from Vandekerkhof et al. (2018).

3.2.2 Market sensing capability

Market sensing capability refers to the ability to gather and filter market information in order to reduce uncertainty and increase opportunities for successful commercial innovation (Teece, 2007). It was operationalized using five items adapted from Lin and Wang (2015).

3.2.3 Family control

Family control is defined as the family involvement in SME control, such as by holding the positions of CEO or board chair (Del Bosco & Bettinelli, 2020). This was measured as a dichotomous variable set to 1 when the CEO or board chair was a member of the owning family, and to 0 otherwise (i.e., when neither the CEO nor the board chair were owning family members) (Chu, 2011).

3.2.4 New product development (NPD) performance

We conceptualized NPD performance as a formative second-order construct with the two first-order dimensions of effectiveness and efficiency (Souder et al., 2017). Effectiveness, which covered the commercial success and technical quality of the products (Olson et al., 1995), was measured using five items adopted from Brettel et al. (2011). Efficiency, which comprised the timeliness and amount of resources allocated to a product's development (Souder et al., 2017), was measured using five items adopted from Brettel et al. (2011).

3.2.5 Control variables

In line with the previous innovation and family SME literature (Chrisman & Patel, 2012; D'Angelo et al., 2016), we controlled for managerial experience, firm size, firm age, R&D intensity, and industry, as these variables may influence NPD performance

(Mauerhoefer et al., 2017). Managerial experience was captured by means of the number of years for which the manager/CEO had been employed in his/her current position (Boling et al., 2016). Firm size was measured by the number of employees in a firm. Firm age was measured as the number of years since a firm had been founded. R&D intensity was calculated as the ratio of R&D employees to total ones (D'Angelo et al., 2016). Industry was used as a dummy variable set to 0 for manufacturing and to 1 for services.

3.3 Assessment of biases

First, non-response bias was assessed to determine the statistical representativity of the F-SMEs that had agreed to take part in our study. Specifically, we compared early and late respondent groups in regard to its demographic and main variables. The results of the *t*-test revealed no significant difference ($p > 0.05$) between the two groups (Armstrong & Overton, 1977), suggesting that non-response bias was not an issue in our data.

Second, the cross-sectional nature of our study could have caused the data to be affected by common method bias (CMB). Accordingly, we followed statistical procedures to test for the presence of such bias. Following a previous study (Adomako et al., 2019), we estimated three competing confirmatory factor analysis (CFA) models. Model 1 was a method-only one in which all items were loaded on a single latent construct; we obtained a poor model fit: $\chi 2/D.F. = 9.23$; CFI = 0.60; TLI = 0.50; RMSEA = 0.18; SRMR = 0.18. Model 2 was a trait-only one in which each item was loaded on its respective latent construct, we obtained a good model fit: $\chi 2/D.F. = 1.39$; CFI = 0.98; TLI = 0.98; RMSEA = 0.04; SRMR = 0.04. Model 3 was a method- and- trait one in which a single factor was included and linked with all the items in Model 2; we obtained an acceptable model fit: $\chi 2/D.F. = 1.31$; CFI = 0.99; TLI = 0.98; RMSEA = 0.03; SRMR = 0.04. Subsequently, the comparison of the three models suggested that Model 2 and Model 3 were superior to Model 1 and that Model 3 was not substantially better than Model 2. Hence, we concluded that our study dataset was not affected by CMB.

4   Analyses and Findings

4.1 Validity and reliability assessment

We performed a CFA to evaluate the reliability and validity of the measures. The CFA measurement model was found to fit the data well: $\chi2$/D.F. = 1.39; CFI = 0.98; TLI = 0.98; RMSEA = 0.04; SRMR = 0.04. The results further suggested that all standardized factor loadings were significant ($p < 0.001$), positive, and high in magnitude (> 0.65), thus confirming convergent validity (Kline, 2015).

Next, we evaluated Cronbach's alpha (CA), composite reliability (CR), and average variance extracted (AVE). As shown in Table 1, the values of CA, CR, and AVE were found to exceed their respective recommended thresholds of 0.70, 0.70, and 0.50 (Bagozzi & Yi, 1988). Thus, all our individual measures demonstrated adequate reliability and convergent validity.

Further, we assessed discriminant validity using the procedure defined by Fornell and Larcker (1981). We found that the square root of the AVE for each construct exceeded the correlation of each pair of constructs. Thus, we concluded that our study's constructs had achieved discriminant validity. The descriptive statistics and correlation of the constructs are presented in Table 2.

---- Insert Table 2 About Here ----

4.2 Structural model estimation

Having established the reliability and validity of our multi-item constructs, the hypothesized relationships were tested using structural equation modelling in the form of path analysis. We estimated seven models, with market sensing capability as the dependent variable in Models 1 and 2, and NPD performance as the dependent variable in Models 3 to 7. Models 1 and 3 were baseline models with only control variables. In Model 2, the direct effect of SEW on the market sensing capability was tested. Model 4 included the direct effect of SEW on NPD performance. In Model 5, we tested the direct effect of the market sensing

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capability on NPD performance. Model 6 included the direct effects of both SEW and the market sensing capability on NPD performance. In Model 7, we added the interaction effect variables (market sensing capability x family control). The results are presented in Table 3.

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The findings from Model 4 (see Table 3), which show a significant and positive relationship between SEW and NPD performance ($\beta = 0.27$, $p < 0.05$), indicate support for Hypothesis 1; i.e., that SEW is positively related to NPD performance.

The results of Model 2 (Table 3) show that the relationship between SEW and the market sensing capability is significant ($\beta = 0.28$, $p < 0.001$). Model 4 suggests that the structural path from SEW to NPD performance is significant ($\beta = 0.27$, $p < 0.05$). Model 5 shows that the market sensing capability is positively and significantly related to NPD performance ($\beta = 0.54$, $p < 0.001$). Importantly, the positive association between SEW and NPD performance ($\beta = 0.14$, $p < 0.10$) was found to disappear when the effect of SEW on NPD performance is channelled through the market sensing capability ($\beta = 0.47$, $p < 0.001$). These findings provide empirical support for Hypothesis 2; i.e., that the market sensing capability mediates the relationship between SEW and NPD performance.

To examine the moderated-mediation relationship, we used path analysis to evaluate the moderating effect. As Model 7 (Table 3) shows, the effect of the market sensing capability on NPD performance is strengthened for family-controlled SMEs ($\beta = 0.59$, $p < 0.001$), which supports Hypothesis 3; i.e., that the indirect effect of SEW on NPD performance through the market sensing capability is strengthened when family control is high. To further confirm such hypothesis, we performed a multi-group analysis for non-family- and family-controlled SMEs. The results (Table 4) show that the market sensing capability mediates the relationship between SEW and NPD performance in family-controlled

SMEs (β = 0.12, *p* < 0.01) but not in non-family-controlled ones (β = -0.01, *p* > 0.10), thus confirming Hypothesis 3.

---- Insert Table 4 About Here ----

To check for the robustness of our findings, we further estimated the hypothesized moderated-mediation mechanism using PROCESS macro Model 14 (Hayes, 2013). We found positive and significant effects of SEW on both NPD performance (β = 0.10, *p* < 0.01) and the market sensing capability (β = 0.22, *p* < 0.001). In turn, the market sensing capability was found to be positively related to NPD performance (β = 0.26, *p* < 0.001). More importantly, the indirect effect of SEW on NPD performance, which we tested by using 5,000 bootstrap samples at a 95% confidence interval, was found to be significant [β = 0.06, LLCI = 0.02 – ULCI = 0.10]. Thus, Hypothesis 2 is formally confirmed. For the moderated-mediation, the results suggest that the conditional indirect effect of SEW on NPD performance is only significant for family-controlled SMEs [β = 0.08, LLCI = 0.03 – ULCI = 0.14]. These findings provide formal support for Hypothesis 3 (see Table 5).

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5   Discussion and Implications

Given the important role that SEW plays in them, family firms are unique compared to other forms of organization (Gomez-Mejia et al., 2011). Existing studies have adequately documented the impact of SEW on family-owned firm performance, with some suggesting a positive one (Alonso-Dos-Santos & Llanos-Contreras, 2019; Dyer, 2018), and others negating it (Kellermanns et al., 2012; Memili et al., 2020). In our study, we leveraged a unique dataset of family-owned SMEs from the UAE and examined the impact of SEW on NPD performance. Given the positive or negative impact of SEW on performance reported by extant studies, we incorporated some important mediating and moderating variables with

the potential to shed light on the conditions whereby SEW enhances NPD performance in F-SMEs. We incorporated market sensing as one of the key mediating variables through which F-SMEs can leverage and effectively deploy their SEW to enhance their NPD performance. This was in line with those earlier studies that had suggested a positive impact (Alonso-Dos-Santos & Llanos-Contreras, 2019; Dyer, 2018). Our findings further indicate that the market sensing capability acts as an important mechanism capable of enhancing the impact of SEW on NPD performance. This provides important insights into the underlying mechanisms of the SEW-performance link, complementing those earlier studies that had noted a negative impact of SEW on NPD performance (Kellermanns et al., 2012; Memili et al., 2020). This is a unique finding of our study, given that the market sensing (dynamic) capability has hitherto mainly been applied in the business management literature.

We further incorporated the boundary conditions and examined their moderating impact on family- vs. non-family-controlled boards, we found support for family control enhancing the indirect effect of SEW on NPD performance through the market sensing capability. This is another unique finding that offers a very fine-grained understanding of the moderated-mediation impact, showing that the influence of SEW on NPD via market sensing is stronger under family-controlled environment. These findings are in line with the extant literature that has advocated the need to preserve SEW for better performance. Our findings extend the existing body of literature by suggesting the governance conditions under which NPD performance can be attained.

5.1 Implications for theory

Our article contributes theoretically to the nexus of the product innovation, dynamic capability, and SEW literatures by drawing key insights from the dynamic capability and upper echelons theoretical perspectives. First, prior research had not fully examined how SEW can contribute to innovation-related outcomes and the conditions under which these outcomes are effective. Our findings reveal that SEW is positively related to the NPD performance, and this relationship is mediated by market sensing capability. These findings

differ from those of Hauck and Prügl (2015), who argued for the dark side of SEW, whereby intergenerational authority is negatively associated with innovation. We found that the influence of SEW on new product performance via the market sensing capability is stronger when a firm is controlled by family members. Our research advances the knowledge of how the market sensing capability can create value when a company is managed by family board members. This is one of our study's central contributions, given that the prior literature had yielded mixed results for the relationship between SEW and performance outcomes. Thus, we highlighted an important mediating variable (market sensing) suited to explicate the role played by SEW and its connection to NPD performance. By testing a moderated-mediation model, we offer valuable insights into the phenomenon through which NPD performance can be enhanced in family-owned firms. Specifically, our study shows the importance of a dynamic capability (marketing sensing) through which SEW can create more value. These findings underscore that family businesses can make a strategic commitment to innovation activities by developing the key unique capabilities that are essential for innovation-related outcomes.

A considerable body of research has focussed on dynamic capabilities in the strategic management field (Eisenhardt & Martin, 2000; Teece, 2007; Teece et al., 1997); yet, few studies have examined the role played by such capabilities in family-owned firms (Chirico et al., 2012; Chirico & Salvato, 2008; Salvato & Melin, 2008). Overall, besides integrating important boundary conditions, our study provides a very fine-grained view of how family-owned firms can capitalize on the non-financial resources inherent in SEW by leveraging vital dynamic capabilities. It also provides useful insights into the governance issues of family-owned firms (Aguilera & Crespi-Cladera, 2012) through contingency variables. Carnes and Ireland (2013) argued that the unique capabilities and resources possessed by family-owned firms do not necessarily have a direct influence on firm performance. By applying a dynamic capability theoretical perspective in our conceptual model, we provided empirical support and extended the theoretical findings that the effect of

SEW on product innovation performance is mediated by dynamic capabilities. Chua et al. (2012) suggested broadening the perspective of governance and capabilities in innovation-related outcomes for family-owned firms; hence, our study contributes theoretically by considering the moderating role played by family- vs. non-family-controlled boards (governance). Upper echelons theory has been widely applied in the context of TMTs in the business management literature (Chen et al., 2015; Hambrick, 2007). By applying this theoretical perspective to family- vs. non-family-controlled board conditions, we contribute answers to the critical line of theoretical enquiry regarding how board composition affects innovation-related outcomes. Overall, our findings provide important insights drawn from the relatively underexplored context of the UAE, in which—as is also the case for other similar markets of the Middle East—the governance issues found in family-owned firms are underexplored. We thus shed light on the role played by family- vs. non-family-controlled boards and on the important capabilities that are conducive to NPD performance in family-owned firms in emerging markets.

5.2 Implications for Practice

Family-owned firms are becoming increasingly important in the global economy. Our findings provide the managers of such firms with important insights. First, they suggest that managers need to preserve the SEW of family-owned firms as a vital non-financial resource for value creation. Managers need to leverage the knowledge and experience of family members in order to enhance the NPD performance of such firms. Second, they suggest that market sensing capabilities are vital to enhancing the impact of SEW on NPD performance. Managers need to work on developing and strengthening unique capabilities—such as market sensing ones—in order to effectively compete on the market. Such capabilities are extremely important to sense market changes and can aid firms in developing sustainable competitive advantages. Non-family-controlled boards may prioritise their private gains, and a mix of family and non-family board members may therefore lead to

conflict; thus, despite their diverse knowledge and experience, non-family-controlled boards may not prove to be of much value to family-owned firms.

Innovating products and services is critical for long-term performance and is thus one of the core practical issues for business managers. The dispersion of control of the board can potentially function as an innovation booster. Our study's findings further provide managers with insights into an important contingency factor that can enhance the impact of SEW and the market sensing capabilities for NPD performance in family-owned firms. Managers need to carefully select both family and non-family members to serve on the board. Our findings suggest that family-controlled boards in SMEs are in a better position than non-family-controlled ones to leverage market sensing capabilities; this suggests that the tacit knowledge possessed by family members is extremely valuable for the utilisation of dynamic capabilities, which may enable family-owned firms to exploit and preserve their SEW.

5.3 Implications for Policymakers

Family-owned firms have been significantly contributing to the UAE's national socio-economic development. In this regard, our findings provide the important and timely understanding that firms can enhance their NPD performance via the market sensing capability under the condition of family-controlled boards. Policy makers should support family-owned firms by offering their management development programmes and provide subsidies to such firms involved in innovation activities such as new product development. In addition, the government could also provide its support to networking, industry, and knowledge dissemination events suited to enable these businesses to develop better market sensing capabilities related to innovation activities within their respective sectors, and to engage with the industry to seek knowledge. Our findings also indicate that the governance of family-owned firms is important for the realization of their innovative potential in terms of NPD performance. Thus, policy makers should formulate governance policies whereby both family- and non-family board members are encouraged to be part of family-owned firms. In

addition, emerging market policy makers should support the establishment of family-owned firms—given their role in the local economic development and NPD performance—and investment in such firms should be facilitated.

5.4 Limitations and Future Research Directions

While our study offers valuable theoretical and managerial contributions, it also has some limitations. It only examined marketing sensing—a key dynamic capability—as a mediator, and the family vs. non-family control of boards as a moderator. Future research could thus consider other key dynamic capabilities such as configuration and seizing (Teece et al., 1997). Studies could also consider the potential mediating role played by meta-dynamic capabilities (such as marketing agility) (Khan, 2020), and outside-in capabilities (such as customer engagement and networking) versus inside-out ones (e.g., product development, pricing, and planning) in NPD performance (Mu et al., 2018). Studies could also consider other factors, such as board member interaction with marketing managers for innovation-related outcomes. Such studies could examine the interactions of various top management team members—such as marketing and R&D directors—and how such interactions enhance NPD performance. Another possible research avenue suited to extending this field would involve examining how family-owned firms can create value through innovation-related activities during and in the wake of the pandemic era; such studies could focus on both the financial and non-financial performance of family-owned firms. Scholars could also consider testing the model in relation to other types of innovation-related activities, such as responsible and collaborative innovation. Our study focussed on a single emerging market; therefore, to improve the generalizability of our findings, future ones could compare the model across family- and non-family-owned firms in advanced vs. emerging markets or in weak vs. strong institutional settings.

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Appendix-I

Table 1. Measures and reliability/validity results.

Details of measures and results of the reliability tests for multi-item constructs	Standardized factor loadings
Socio-emotional wealth (CA = 0.90; CR = 0.90; AVE = 0.69)	
1. It is essential to preserve the family control and independence of the family firm.	0.88
2. Family members have a strong sense of belonging to the family firm.	0.92
3. Non-family members are treated as part of the family.	0.76
4. Successful business transfer to the next family generation is an important goal of the family firm.	0.75
Market sensing capability (CA = 0.87; CR = 0.87; AVE = 0.56)	
Our firm possesses the ability to ---	
1. --- acquire and use market information.	0.71
2. --- anticipate rivals' actions.	0.74
3. --- predict consumer demand.	0.82
4. --- establish a database to serve customers.	0.71
5. --- integrate market and technology information.	0.75
NPD performance	
Effectiveness (CA = 0.85; CR = 0.86; AVE = 0.56)	
The new product fully met all objectives in terms of ---	
1. --- return on investment	
2. --- revenue	0.71
3. --- unit cost	0.89
4. --- competitive advantage	0.75
5. --- market share	0.71
Efficiency (CA = 0.91; CR = 0.91; AVE = 0.66)	
1. The development phase was shorter than we expected.	0.83
2. The commercialization phase was shorter than we expected.	0.80
3. We accomplished market introduction as scheduled.	0.81
4. The market introduction was in line with the projected budget.	0.82
5. The new product development was in line with the projected budget.	0.79
Goodness-of-fit statistics: $\chi2$/D.F. = 1.39; CFI = 0.98; TLI = 0.98; RMSEA = 0.04; SRMR = 0.04.	

Abbreviations: AVE, average variance extracted; CA, Cronbach alpha; CR, composite reliability.

Table 2. Descriptive statistics and correlations.

Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10
1. Managerial experience	1.10	0.26	1.00									
2. Firm size‡	1.88	0.40	0.04	1.00								
3. Firm age‡	1.11	0.37	-0.10	-0.10	1.00							
4. Industry†	1.41	0.49	0.05	0.18***	-0.04	1.00						
5. R&D intensity	0.17	0.19	0.03	-0.02	-0.06	-0.02	1.00					
6. Family control	0.67	0.47	-0.09	0.04	0.01	0.05	0.00	1.00				
7. Socio-emotional wealth	4.64	1.37	-0.02	0.02	0.00	0.10	0.07	-0.01	**0.83**			
8. Market sensing capability	4.91	1.12	0.02	0.06	-0.03	0.07	-0.05	0.04	0.27***	**0.75**		
9. Effectiveness	5.10	1.22	0.04	0.14*	0.01	0.11	-0.06	-0.03	0.03	0.27***	**0.75**	
10. Efficiency	4.94	1.35	0.15*	0.13*	0.05	0.18***	-0.02	0.02	0.21***	0.27***	0.22***	**0.81**

Note. ‡ = natural logarithm; † = dummy variable; S.D. = standard deviation; square roots of AVE in diagonal; significance levels: *$p < 0.05$, **$p < 0.01$, ***$p < 0.01$ (2-tailed test).

Table 3. Results of the structural model estimation.

Independent variables	Market sensing capability		NPD performance				
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Control paths							
Managerial experience	0.03 (0.39)	0.02 (0.34)	0.24* (2.05)	0.23$^\#$ (1.86)	0.23* (2.26)	0.23* (2.38)	0.23* (2.49)
Firm size	0.04 (0.58)	0.04 (0.68)	0.20$^\#$ (1.69)	0.16 (1.51)	0.21* (2.01)	0.19* (2.03)	0.18* (1.98)
Firm age	-0.02 (-0.26)	-0.03 (-0.48)	0.13 (1.26)	0.12 (1.26)	0.15 (1.47)	0.15 (1.58)	0.12 (1.32)
Industry	0.06 (0.82)	0.03 (0.49)	0.28* (2.10)	0.22$^\#$ (1.82)	0.26* (2.46)	0.24* (2.43)	0.22* (2.39)
R&D intensity	-0.05 (-0.74)	-0.07 (-1.15)	-0.05 (-0.49)	-0.05 (-0.61)	-0.03 (-0.36)	-0.03 (-0.38)	-0.04 (-0.44)
Direct paths							
Socio-emotional wealth		0.28*** (4.29)		0.27* (1.99)		0.14 (1.47)	0.13 (1.41))
Market sensing capability (MSC)					0.54*** (4.31)	0.47*** (3.96)	0.43*** (3.65)
Family control (FC)							0.01 (0.08)
Moderating path							
MSC X FC							0.59*** (4.89)
Goodness-of-fit statistics							
χ2/D.F.	1.62	1.42	1.38	1.22	1.37	1.27	
CFI	0.97	0.98	0.97	0.99	0.99	0.99	
TLI	0.95	0.96	0.96	0.98	0.97	0.98	
RMSEA	0.05	0.04	0.04	0.03	0.04	0.03	
SRMR	0.04	0.03	0.04	0.03	0.03	0.03	

Note. T-values are reported in parentheses; significance levels: #$p < 0.10$, *$p < 0.05$, **$p < 0.01$, ***$p < 0.01$ (2-tailed test); abbreviation: NPD = new product development.

Table 4. Results of multi-group analysis.

Paths	Non-family-controlled SMEs	Family-controlled SMEs
Socio-emotional wealth → NPD performance	-0.04 (-0.36)	0.19* (2.53)
Socio-emotional wealth → Market sensing capability	0.18# (1.72)	0.30*** (3.97)
Market sensing capability → NPD performance	-0.07 (-0.69)	0.41*** (5.91)
Socio-emotional wealth → Market sensing capability → NPD performance	-0.01 (-0.12)	0.12** (2.69)

Note. Significance levels: #$p < 0.10$, *$p < 0.05$, **$p < 0.01$, ***$p < 0.01$ (2-tailed test).

Table 5. Results of PROCESS macro.

Paths	Estimates	LL 95% CI	UL 95% CI
Direct effects			
Socio-emotional wealth → NPD performance	0.10*	0.02	0.19
Socio-emotional wealth →Market sensing capability	0.22*	0.12	0.32
Market sensing capability → NPD performance	0.26*	0.15	0.37
Indirect effects			
Indirect effect	0.06*	0.02	0.10
Total effect	0.10*	0.02	0.19
Conditional indirect effects			
Group 1: Non-family-control	-0.01*	-0.06	0.03
Group 2: Family-control	0.08*	0.03	0.14

Note. Abbreviation: SD = standard deviation; * Nonzero within the boundaries (significant).
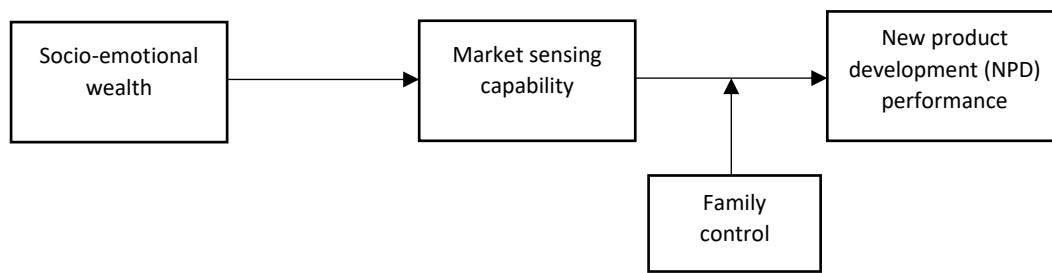
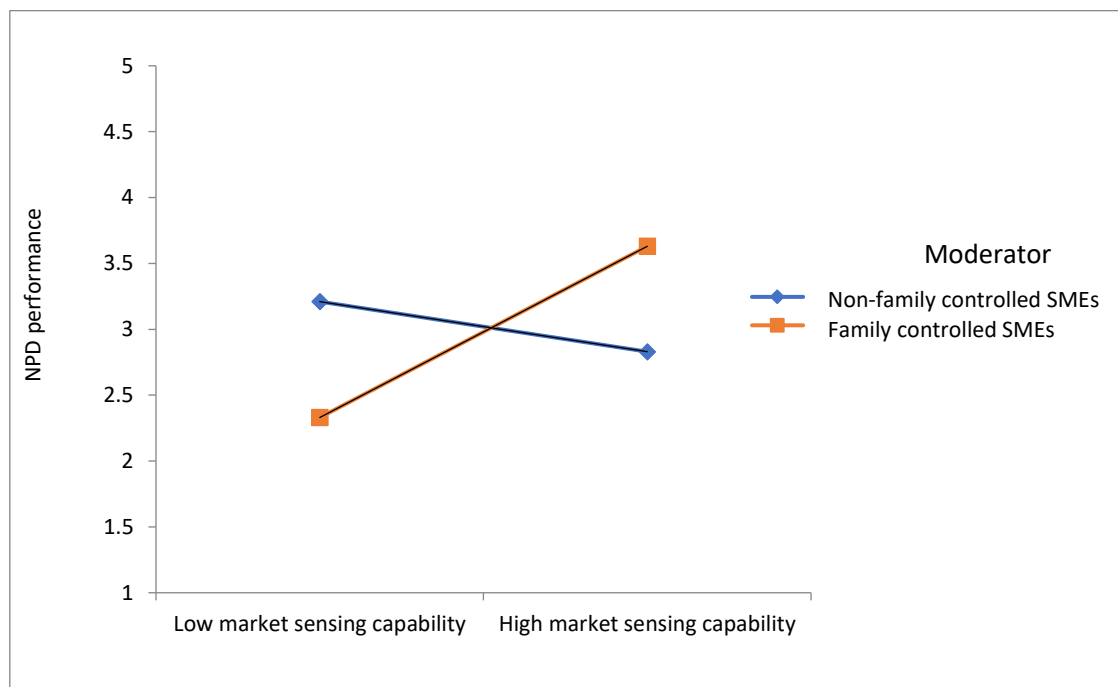**Figure 1.** Conceptual framework of the study.

Figure 2. Two-way interaction between market sensing capability and family control.