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The impact of SME internationalization on innovation: The mediating role of market and entrepreneurial orientation

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ABSTRACT

In today's highly competitive global environment, even small and medium-sized enterprises (SMEs) need to make product and process innovations in order to outperform the competition and satisfy global customers. Investigating the success factors of innovation performance has become critical for the survival and competitiveness of SMEs. The aim of this study is to explore the impact of the degree of internationalization (DoI) on innovation performance through the mediating factors of market and entrepreneurial orientation in the context of emerging-market SMEs. We tested our model and hypotheses with 235 SMEs in the United Arab Emirates, which is an emerging market. The results obtained from partial least squares estimates indicate that the degree of internationalization positively affects innovation performance and, more importantly, that this relationship is indirect and fully mediated by market and entrepreneurial orientation for SMEs. These results shed light on the mechanism of the effect of DoI on innovation performance in the emerging-market SME context.

1. Introduction

In an increasingly competitive global environment, small and medium-sized enterprises (SMEs) exert a great impact on the economies of countries due to their large number and the share of the workforce involved in them. Especially in emerging countries, SMEs make up the vast majority of businesses and create most of the jobs. They have a strong influence on the economies of such countries and are the engine of economic growth (Bruque & Moyano, 2007; Peres & Stumpo, 2000). SMEs in the Gulf region form the backbone of the private sector—representing 90% of all commercial activities (Rettab & Azzam, 2011). Moreover, SMEs in the Gulf region accounts for > 80% of the overall workforce and 60% of gross domestic product (PWC, 2016). Therefore, enhancing the competitiveness of SMEs in emerging markets is crucial for the economic growth of those markets.

We collected our data from the United Arab Emirates (UAE), one of the most active countries in economic development within the region. In particular, the UAE national economy experienced constant GDP growth rates, which averaged 3.8% from 2002 to 2016. SMEs are key contributors to the UAE's economic and employment growth, which can be attributed to their dynamism and capacity to exploit new opportunities and new knowledge. Furthermore, the UAE economy has been underpinned by wealth derived from the large national oil reserves, which has sustained the strong and growing national economy. This wealth combined with rewarding trading policies, a favorable tax requiem, and loose employment regulations has allowed manufacturing and industrial companies the ease and affordability to purchase capital equipment and hire talent from abroad. Likewise, SMEs have also taken advantage of foreign purchases of consumer and commercial goods to satisfy the growing demand within the country. In the Abu Dhabi Economic Vision 2030, the Abu Dhabi government stipulates that one of their action plans for a more sustainable and diversified economy is to stimulate local innovation development in business enterprises. Thus, promoting innovation among SMEs is seen as the way forward given their greater flexibility and motivation to gain a competitive advantage in international markets (GEM-UAE, 2016). Moreover, SMEs in the UAE have been recognized for their affordability of the latest technology and for outside consultants. Furthermore, the UAE is cited as having entrepreneurial capacity. One of the contributing factors to the UAE's high entrepreneurial capacity rating is its strong international business perspective evidenced by a majority of SMEs having some international customers (GEM-UAE, 2016).

Although SMEs dominate the economy in terms of magnitude and employment, they generate relatively low levels of value-added products/services and exports. One of the reasons for this situation is the lack of innovation in SMEs. While the importance given to innovation

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increases day by day, only half of SMEs are involved in some sort of innovation (Ozer & Dayan, 2015). The competitive environment that SMEs face today has encouraged them to look for ways to improve their innovativeness and hence competitiveness. Therefore, innovation is becoming an essential requirement for SMEs to compete in local and international markets (Zahra & George, 2002). SMEs that innovate have higher productivity and growth rates and are more profitable than their less innovative counterparts (Geroski, Machin, & Van Reenen, 1993; Roper & Hewitt-Dundas, 1998).

The accelerated globalization of world markets in the past decades has also affected SMEs, which has driven attention to the increasing importance of internationalization for SMEs (Gurău & Ranchhod, 2006). Internationalization is viewed as a "process through which a firm moves from operating solely in its domestic marketplace to international markets" (Javalgi, Griffith, & White, 2003: p. 185). Due to declining barriers to trade and improvements in transportation technologies (Oviatt & McDougall, 1994), SMEs have been expanding to international markets more rapidly (Coviello & Munro, 1997; Young, Hamill, Wheeler, & Davies, 1989). In addition to the market expansion benefits, internationalization may lead to a learning effect. Performing international activities can lead firms to acquire several skills and competencies that may, in turn, make them more innovative. In spite of enjoying these benefits of internationalization, SMEs face great challenges by being exposed to increasing global competition. Different from large multinational enterprises, SMEs often lack the necessary resources and capabilities, which makes their internationalization process more challenging.

Innovation is one major way to stay competitive as it leads to cost reduction and/or product differentiation (O'Dwyer, Gilmore, & Carson, 2009; Rosenbusch, Brinckmann, & Bausch, 2011). Firms that do not make product and service improvements become even more vulnerable to competition at the international level. Internationalization might drive firms to innovate in order to survive and compete effectively in global markets (Selnes & Sallis, 2003). Not every SME that engages in international activities innovates. Therefore, the question to explore is when and how internationalization motivates SMEs to innovate. We believe the relationship between internationalization and innovation is not straightforward but rather complex. However, little effort has been made to test and examine how internationalization fosters or hinders a firm's innovation performance. Among the few studies that have examined this issue (e.g. Chang, Chang, Hsu, & Yang, 2018; Ren, Eisingerich, & Tsai, 2015), there is no consensus about the underlying mechanism of this relationship and direct and/or indirect effects of seeking internationalization on innovation.

The aim of this study is to fill this gap by looking at an understudied area and investigate the relationship between internationalization and innovation performance in the context of emerging-market SMEs. This study contributes to the literature in several important aspects. First, different from the prior literature, where only the direct effect of internationalization on innovation has been studied, we explore the underlying mechanism of this relationship. In particular, we study the mediating effects of market and entrepreneurial orientation between internationalization and innovation performance. We propose that being more internationalized can lead SMEs to become more market and entrepreneurial oriented, which, in turn, makes them more innovative. The link between internationalization and being market and entrepreneurial oriented is the learning effect. If this link is broken by SMEs that do not see the opportunities of internationalization beyond just "selling more units," innovation outcomes become hard to achieve. Second, most of the existing studies have examined this issue in the context of developed markets (Delmar, Davidsson, & Gartner, 2003; Golovko & Valentini, 2011) and few studies have been conducted about emerging countries (Carolina Zonta & Amal, 2018). Emerging market firms use internationalization as a learning advantage and an opportunity to upgrade innovation capabilities (Guillén & García-Canal, 2009), but the underlying mechanism of how this happens is still unclear (Chittoor, Kale, & Puranam, 2015). Moreover, there has been an increasing attention to the drivers of innovation for SMEs in the Gulf Region (e.g. Pervan, Al-Ansaari, & Xu, 2015). In this regard, this study fills a gap in the literature and responds to the calls for research on SME internationalization in emerging economies at a greater depth (Ibeh & Kasem, 2011; Kiss, Danis & Cavusgil, 2012). With this theoretical contribution, we shed light on the relationship between internationalization and innovation and, to the best of our knowledge, become the first study that investigates market and entrepreneurial orientation as the mediating factors of this link. As a result, this study contributes to the internationalization of business and innovation and SME literatures.

We tested our model and hypotheses with 235 SMEs in the UAE business to business (B2B) market, which is an emerging economy. We selected the UAE because it strongly encourages firms, in particular SMEs, to innovate, as it has been trying hard to transform from oil-based to innovation-based economic growth. We conducted face-to-face surveys with the managers of these SMEs. The results of our study indicate that the degree of internationalization positively affects innovation performance and, more importantly, that this relationship is fully mediated by market and entrepreneurial orientation. Our results support the proposed model and provide new insights into the relationship between internationalization and innovation. We highlight that the impact of internationalization on innovation is indirect and mediated by market and entrepreneurial orientation.

Our paper is structured as follows. First, by providing a theoretical background to the study, we establish the theoretical relationships among internationalization, market orientation, entrepreneurial orientation and innovation performance, followed by our hypotheses. We then introduce the methodology and analytical procedure and report the results of the analyses. Finally, we close by discussing conclusions, highlighting implications for practitioners, and presenting limitations and suggestions for future research.

2. Literature review and hypothesis development

2.1. Innovation in SMEs

Growing globalization, increasing competition, change, and uncertainty within many markets have placed tremendous pressure on firms. Another issue in today's business environment is the shortening of product and service life cycles (Hamel, 2000). Accordingly, the future profits from existing products and services are uncertain and businesses need to continuously explore new products and services to offer. It is widely accepted that regardless of the size of the firm and the country in which they operate, firms must constantly develop superior quality and innovative products in order to outperform their competitors (O'Dwyer et al., 2009; Rosenbusch et al., 2011). Therefore, innovation has become key to staying competitive in today's marketplace. An innovation is defined as a new product or service, a new production process technology, and a new structure or administrative system (Damanpour, 1991). Based on this definition, we specified innovation as to cover both product and process improvements as well as both incremental and destructive types.

The increasing importance of SMEs for the well-being and growth of economies has triggered great attention to these enterprises among scholars (OECD, 2002). There have been several studies that examine SMEs from different aspects, including success factors, internationalization and competitiveness (e.g. Brush, Edelman, & Manolova, 2002; Westhead, Wright, & Ucbasaran, 2001). Still, since most of the prior studies examine large multinational companies, research in this area has not yet reached conclusions (Delmar et al., 2003; Golovko & Valentini, 2011).

SMEs, with fewer resources compared to big multinationals, are more prone to risk of bankruptcy due to intense competition. Innovation capability has been found to be one of the most effective

ways in which SMEs can deal with those challenges and compete in the market (Zahra & George, 2002). SMEs with greater innovation have higher growth rates, productivity and profitability compared to their less innovative counterparts (Geroski et al., 1993; Roper & Hewitt-Dundas, 1998). For example, Bhaskaran (2006) found that SME seafood distributors in Australia that were committed to innovation obtained better business results than those that were not. In other studies, being innovative is considered a prerequisite for SME success and survival (Rhee, Park, & Lee, 2010; Rosenbusch et al., 2011).

Although their size can put SMEs at a disadvantage relative to big multinationals, being small also allows them to be flexible and nimble. As a result, they can quickly develop new products and customize them to niche markets (Rosenbusch et al., 2011). Therefore, in spite of SMEs typically facing resource constraints (Mort & Weerawardena, 2006; Terziovski, 2010), they are considered to be successful innovators (Rosenbusch et al., 2011; Verhees & Meulenberg, 2004). Given that innovation is critical to SMEs' financial success and survival in global markets, studying the driving forces of innovation success has become an interesting and timely topic to investigate. In the following section, we demonstrate internationalization as the driving factor of innovation performance.

2.2. Internationalization and innovation

Globalization has created a more favorable environment for the internationalization of SMEs due to decline in trade barriers, transportation and communication costs. Increased competition in the home markets of SMEs, especially after the arrival of international competitors, also creates strong pressure on SMEs to seek opportunities in international markets (Dana, Van Ginneken, Nayar, & Koenderink, 1999; Zahra & George, 2002). As a result, we have seen increasing participation of SMEs in international activities, which improves their competitiveness and survival rates (Lee, Shin, & Park, 2012; Pangarkar, 2008). That has triggered tremendous interest in academia in studying the drivers, antecedents, success factors and outcomes of the internationalization of SMEs.

A body of literature has examined the relationship between internationalization and innovation in SMEs (Cassiman & Golovko, 2011; Filatotchev & Piesse, 2009; Frey, Iraldo, & Testa, 2013; Golovko & Valentini, 2011; Kafouros, Buckley, Sharp, & Wang, 2008; Pla-Barber & Alegre, 2007). This relationship is a dynamic virtuous circle in which internationalization and innovation reinforce each other (Golovko & Valentini, 2011), resulting in two research streams that examine the impact of one on the other. The first stream of literature has looked at the effect of innovation on internationalization (Basile, 2001; Cassiman & Martinez-Ros, 2007; Dai, Maksimov, Gilbert, & Fernhaber, 2014; Filatotchev & Piesse, 2009; Golovko & Valentini, 2011; Knight & Cavusgil, 2004; Zucchella & Siano, 2014). This effect has been found to be positive, negative or insignificant; therefore, the current body of literature has not achieved a consensus about this effect. One argument regarding these heterogeneous results is that the effect depends on the industry context (Lachenmaier & Wößmann, 2006).

The second stream of literature, which includes fewer studies compared to the previous stream, investigates the impact of internationalization on innovation (Cassiman & Golovko, 2011; Frey et al., 2013; Kafouros et al., 2008; Pla-Barber & Alegre, 2007). Firms that internationalize may gain access to knowledge that is not available in their domestic market and can then utilize this knowledge to produce more and higher-quality innovations (e.g. Alvarez & Robertson, 2004; Salomon & Shaver, 2005). Studies have found that the international orientation of a firm raises the probability of innovation (Love & Ganotakis, 2013; Sdiri & Ayadi, 2011). Exporting has been found to be positively related to both product and process innovation (Blind & Jungmittag, 2004). Little research on this relationship in the SME context has supported the results from other studies on multinationals. For instance, one study found a positive effect of internationalization on the innovation capabilities of SMEs (Frey et al., 2013). However, there have not been many studies examining the underlying mechanism, in particular the mediating factors, of this link in emerging market SME context.

There can be several skills and competencies gained through internationalization that in turn become drivers for innovation. Among others, internationalization helps to generate resources that make innovation easier and reduce its cost (Kafouros et al., 2008). As highly internationalized firms can access many markets around the world, they can acquire essential resources for R&D from the cheapest available sources and locate their R&D and other departments in the most productive regions (Kafouros et al., 2008). Furthermore, through internationalization firms can acquire several competencies through observing, knowledge transfer and incorporating others' experience that may refer to a learning effect (Banerjee, Prabhu, & Chandy, 2015). Moreover, internationalization enlarges the market served and the sales volume, which allows companies to allocate more resources to R&D. In other words, R&D, which is a fixed cost, can be spread over a larger amount of sales. This creates more incentives to invest in R&D, as well as supporting productivity and innovation. In addition, internationalization forces firms to deal with a variety of different customers' needs and wants and compete with successful products of their competitors, which also becomes a driving force for innovation (Cloodt, Hagedoorn, & Van Kranenburg, 2006). Moreover, this is also relevant for emerging market SMEs since they learn and innovate by imitating and reverse engineering successful products (Malik & Kotabe, 2009). The conceptual framework and the hypotheses can be seen in Fig. 1.

Hypothesis 1. The degree of internationalization has a direct effect on SME innovation.

Previous studies have investigated the moderating factors of this relationship, such as R&D or marketing capability (Ren et al., 2015). Differently from the prior literature, we focus on the mediators of this relationship. In other words, we want to investigate the mechanism of how internationalization affects innovation performance. We propose market orientation (MO) and entrepreneurial orientation (EO) as mediators of this relationship. We will first discuss how internationalization affects MO and EO and then explain how, in turn, they affect innovation performance.

2.3. The mediating effect of market orientation

MO has been defined as “the organization wide generation of market intelligence pertaining to current and future customer needs, dissemination of the intelligence across departments, and organization-wide responsiveness to it” (Kohli & Jaworski, 1990: p.3). Market orientation reflects the degree to which a firm views the satisfaction of customer needs and wants as an organizing principle (Jaworski & Kohli, 1993). Market-oriented firms develop their strategic market plans based

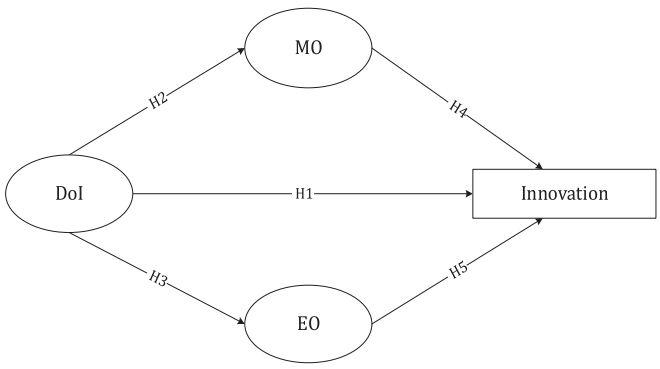

Fig. 1. Conceptual framework of the mediation effects of market and entrepreneurial orientation.

on customer and competitor intelligence. MO has received great attention from scholars, starting from the seminal works of Kohli and Jaworski (1990), Jaworski and Kohli (1993), Narver and Slater (1990) and Slater and Narver (1994). MO is not only a process or an activity; instead, it is a core component of organizational culture (Narver, Slater, & Trietje, 1998). It has been studied in terms of how it affects firm outcomes such as profitability (Baker & Sinkula, 2002), and there is empirical evidence about its positive impact on firm performance (Sin et al., 2000).

Internationalization is one of the factors that affect MO in a couple of ways (Collinson & Houlden, 2005; Küster & Vila, 2011). First, firms face greater competition when they internationalize. Businesses have a greater number of competitors in foreign markets compared to domestic markets. As a result, businesses need to compete with more companies to get the attention of foreign customers and capture some market share. This puts pressure on companies to be more market oriented, as satisfying customers' needs and wants at the international level becomes highly challenging. In addition, internationalization has been considered an evolutionary process in which companies increase their commitment to foreign markets while accumulating knowledge and experience along the way. As businesses become more informed about foreign customers, they often develop more market-oriented strategies to satisfy their customers and gain their loyalty (Küster & Vila, 2011).

Internationalized firms are exposed to a variety of different cultures and ways of doing business. This exposure and diversity foster and encourage firms to understand the differences between customers' expectations in a better way; as a result, they become more market oriented (Kafouros, 2006). Ibeh, Brock, and Zhou (2004) demonstrated that internationalized firms with market-focused strategies have better performance than purely domestic firms, which indicates that MO is more important for international operations. Hence, international experience plays a pivotal role in the MO approach (Collinson & Houlden, 2005; Moen & Servais, 2002). Therefore, we hypothesize the following:

Hypothesis 2. The degree of internationalization is positively related to market orientation for SMEs.

2.4. The mediating effect of entrepreneurial orientation

Entrepreneurial orientation has been defined as the strategic attitude of a firm to engage in risk-taking, innovative and proactive behaviors (Hoskisson, Covin, Volberda, & Johnson, 2011). EO reflects the degree to which businesses put a priority on the identification and exploitation of market opportunities in developing corporate strategy (Lumpkin & Dess, 1996). As originally proposed by Miller (1983), EO emerges through an organization's demonstration of risk-taking, innovativeness and proactiveness (Covin & Slevin, 1986; Zahra, 1991). EO is revealed as the enthusiasm to take risks to develop new product ideas, methods and processes, to renew market offerings, and to be more proactive in identifying and exploiting untapped market opportunities than competitors (Wiklund, 1999; Zahra & Covin, 1995). EO has been developed as a major construct in the strategic management and entrepreneurship literatures over the years (Covin & Slevin, 1986; Miller, 1983; Morris & Kuratko, 2002; Naman & Slevin, 1993). EO has been studied as a relevant construct in the emerging market SME context as well (Cui, Fan, Guo, & Fan, 2018).

Successful internationalization of a firm to foreign markets can lead to a tendency to exploit new market opportunities (De Clercq, Sapienza, & Crijns, 2005). When companies internationalize more, they get skills in searching and exploiting new markets. As they become more experienced in these skills, it lowers the uncertainty for subsequent attempts and they develop entrepreneurial skills and capabilities to better manage uncertainties. With more experience and less uncertainty, firms feel more confident about taking new initiatives and risks, which results in a greater level of entrepreneurial orientation (Ciravegna, Majano, & Zhan, 2014). In addition, participating in internationalization activities provides a learning advantage (Hitt, Hoskisson, & Kim, 1997; Salomon & Shaver, 2005). This learning makes businesses more flexible in acquiring critical knowledge that makes them prone to be more proactive, take more risks and, in turn, be more innovative. Therefore, we hypothesize that internationalization positively affects firms becoming more entrepreneurial oriented.

Hypothesis 3. The degree of internationalization is positively related to entrepreneurial orientation for SMEs.

2.5. The impact of MO on innovation performance

Several research studies have shown positive relationships between MO and innovation (Baker & Sinkula, 2002; Küster & Vila, 2011; Naidoo, 2010). More specifically, they suggest that MO leads to more innovation and greater success with new products (Agarwal, Erramilli, & Dev, 2003; Akman & Yilmaz, 2008; Lado & Maydeu-Olivares, 2001; Verhees & Meulenberg, 2004). Businesses with a higher degree of MO are more successful innovators and have more new product offerings compared to their competitors (Lado & Maydeu-Olivares, 2001). Hurley and Hult (1998) indicate that MO refers to the implementation of new and different actions to respond to market conditions. MO helps firms develop their organizational learning skills to respond to changes in market conditions and enhance market knowledge, which are crucial for innovativeness (Day, 1994). A study on the textile sector found that more market-oriented firms have a positive tendency to innovate, which boosts their success (Küster & Vila, 2011). In the internationalization context, there are greater learning opportunities (Salomon & Shaver, 2005) and the impact of MO on innovation is even stronger (Küster & Vila, 2011).

Another way in which MO affects innovation is through the relationships developed with customers. A market-oriented firm adjusts its processes and activities with the goal of establishing strong ties with its customers and effectively managing relationships with them in the long run (Park, Eisingerich, & Park, 2013). That provides an incentive to firms to invest more in R&D based on customers' needs due to the long-term relationship, which results in greater innovativeness.

MO has been presented an important antecedent of innovation performance (Atuahene-Gima & Ko, 2001; Jaworski & Kohli, 1993). Based on organizational learning theory, firms with a high level of MO learn from their customers, which enhances their innovativeness (García, Avella, & Fernández, 2012; Love & Ganotakis, 2013). Companies that become market oriented through effectively managing interactions with customers put a priority on satisfying the needs and wants of customers which enhance their networking capability. This networking capability allows SMEs to find opportunities to enhance their innovation capability (Bai & Johanson, 2018) which in turn complements technology-related capability (Yang, Huang, Wang, & Feng, 2018). Moreover, market-oriented firms better utilize environmental forces such as technology, regulations, and competitors to satisfy their customers' needs in the best way. Firms that learn more effectively than their competitors possess the basis for more rapid improvement, which can translate into superior new product success (Day, 1994). Therefore, we hypothesize the positive impact of MO on innovation performance.

Hypothesis 4. Market orientation is positively related to innovation performance for SMEs.

2.6. The impact of EO on innovation performance

Firms with EO have the capability to explore and exploit new market opportunities (Barringer & Bluedorn, 1999; Lee, Lee, & Pennings, 2001; Wiklund & Shepherd, 2003) and can stay competitive in the challenging environment (Lumpkin & Dess, 1996; Shane & Venkataraman, 2000). Several studies have found a positive impact of EO on firms' performance (e.g. Li, Huang, & Tsai, 2008; Wiklund, 1999;

Zahra, 1991; Zahra & Covin, 1995), including SMEs (Wiklund & Shepherd, 2005).

Firms with a high level EO improve their products and/or processes by actively searching for novel knowledge (Zahra & George, 2002). EO has also been found to affect innovation, especially when it complements MO (Baker & Sinkula, 2009). Via EO, firms enhance their networks and have the opportunity to collaborate with various stakeholders, including customers, suppliers, different social and institutional actors and so on (Porter & Stern, 2001). This network enables firms to exchange knowledge, resources and competencies with all these actors and learn from them, which enhances the likelihood of innovation (Kafouros, Buckley, & Clegg, 2012; Nieto & Santamaría, 2007).

SMEs command fewer resources, conduct less research and development (R&D) and generally face more uncertainties and barriers to innovation. Such networks help SMEs to overcome those challenges and be successful innovators (Frey et al., 2013). Especially in the era of open innovation, the networks and know-how generated by EO can become a driver of innovation in SMEs (Chesbrough, 2003). Therefore, we propose that EO has a positive impact on firm innovation performance.

Hypothesis 5. Entrepreneurial orientation is positively related to innovation performance for SMEs.

3. Method

3.1. Development of the survey instrument

We used a survey methodology to collect the data and test the proposed hypotheses. The questionnaire was developed based on an extensive literature review. The review considered both empirical and conceptual studies in the fields of international business, innovation management and marketing, and SMEs. The survey instrument comprised 34 items. We adapted all survey items from the existing literature (see Appendix A for the survey items). The survey instruments were pretested with six owners and managers of SMEs located in Abu Dhabi Emirate, who were subsequently interviewed and asked about the clarity of the instruments and accuracy of the items. The main purpose of these interviews was to check for the wording and understanding of each individual question. Based on the feedback obtained from the interviews, some of the scales were modified. Thereafter, we conducted a pilot test on a sample of 10 owners and managers of SMEs who did not participate in the preliminary interviews. After the pilot test, some items were slightly modified again.

3.2. Sample description and research setting

The sample frame was drawn from a list of businesses associated with the Khalifa Fund for Enterprise Development (KFED) and additionally invited firms in the network of an innovation and entrepreneurship research group at a national university in the UAE. KFED is an independent, not-for-profit, socioeconomic development agency of the government of Abu Dhabi to help develop local enterprises in the UAE by instilling and enriching the culture of investment among UAE nationals, as well as supporting and developing SMEs in the global markets by helping them to have commercial relationship with establishments outside the UAE. The sample frame comprised SMEs located in Dubai, Abu Dhabi and Al Ain, cities in the UAE. The overall sample frame consisted of 425 firms, of which 182 were from the list of firms associated with the KFED and 243 were from the research group network. A total of 255 questionnaires were returned, of which 20 had to be rejected as they were not correctly filled in. Therefore, the final number of valid replies was 235, which represents a reply rate of 55.29%. This relatively high rate of response rate was achieved because only a small number of potential respondents, after being personally contacted, refused to or failed to participate.

Table 1
Sample composition[a].

Category	%	# of patents
Industry of firm		
Industrial machinery	13.50	37
Agriculture/processed food product	10.40	23
Electrical and electronics	10.50	35
Pharmaceuticals	11.80	45
Petrochemicals	18.50	63
Construction	11.80	27
Information technology	16.50	55
Others	7.00	24
Size of firm		
1–9 employees	28.50	72
10–99 employees	37.50	98
100–249 employees	34.00	139
Goods		
Consumer	12.50	33
Intermediate	25.50	98
Business	62.00	178
Age of firm		
< 2 years	17.60	18
3–5 years	13.50	33
6–8 years	18.40	43
9–11 years	22.50	89
12–15 years	13.00	60
More than15 years	15.00	66

[a] Other services include transport, logistics, real estate, and general manufacture.

Our sample represents SMEs and details about the industries information contained in Table 1. Moreover, it should be noted that 95% of the respondents were either owner-managers (35%) or managers (60%) of the firms while the remaining 5% held senior management. Regarding respondents, the work experience averaged 11 years and the median age was 36. As far as gender, 85% of respondents were males.

We contacted the firms by phone and screened them to check that they belonged to our target population. The questionnaire, with a cover letter to the owner/manager of each firm explaining the nature and goals of the study, was distributed personally and collected by a group of research assistants. This group consisted of two people from the Middle East and three from the South Asia who were fluent in English, and well trained on procedures of conducting interviews and collecting survey data. All interviews that were conducted by this group were in English as respondents indicated that they were fully comfortable in speaking English. We focused on the owners/managers for two reasons: 1) they possess knowledge of innovation and creativity within the firm; and 2) they are likely to have a wide-ranging view of their firm's internationalization activities. Although others in the organization may well be familiar with these issues, the scope of their knowledge is often limited.

3.3. Non-response bias

Non-response is often a problem for survey research and compromises the study results. In this study, a non-response bias test was conducted according to the procedure of Armstrong and Overton (1977). We performed *t*-tests comparing early and late respondents. The final sample was divided into two groups according to the date on which each firm's questionnaire was received. In total, 126 firms were early responders and 109 firms were late responders. The t-tests performed on the responses of these two groups revealed no statistically significant differences ($p > .05$). Nevertheless, based on Rogelberg and Stanton's (2007) suggestions, two additional tests were also performed for non-response bias. The results show that the observed demographic profiles (industry, type of goods, age of firm and number of employees) of the non-respondents were not significantly different from those of the

respondents. Thus, we conclude that no significant non-response bias was present in our data.

3.4. Common method bias

Since we relied on single informants, several procedural remedies were undertaken to alleviate concerns over common method bias. Following the recommendations of Podsakoff, MacKenzie, Lee, and Podsakoff (2003), we first protected the privacy and confidentiality of respondents; second, we used well-established scale designs to avoid item vagueness; third, we divided the questionnaire into four parts (DoI, MO, EO and Innovation) with a short introductory paragraph; and fourth, we pre-tested the questionnaire. After the data collection process, Harman's one-factor test was performed to determine whether common method bias was an issue (Podsakoff et al., 2003). After we entered all items into a factor analysis, six factors emerged with eigenvalues greater than one, thereby accounting for 74.21% of the variance. The first factor accounted for 24.15% of the variance; thus, we concluded that there was no common factor underlying our data.

3.5. Measurement

In the model that we tested, the dependent variable is the innovation performance of SMEs. Innovation performance was measured through the number of patents owned. Several studies note that number of patents owned is a solid measure of the innovation performance of businesses (Brunnermeier & Cohen, 2003). Patent information has been preferred over more subjective innovation output such as managers' perceptions in the innovation literature. (e.g., Chen, Huang, & Lin, 2012; Hsu, Lien, & Chen, 2015). Patent data contain standardized information regarding innovation; therefore, it has often been treated as the most accurate indicator of innovation (Frietsch & Grupp, 2006; Hagedoorn & Cloodt, 2003; Hurtado-Torres, Aragón-Correa, & Ortiz-de-Mandojana, 2018). Patent was chosen as it is an objective measure and therefore increases the reliability of the measurement.

The main independent variable, which is *degree of Internationalization (DoI)*, was measured as a construct. DoI has been used by several scholars to refer to the level of internationalization of businesses (Reuber & Fischer, 1997; Sullivan, 1994). Most of the previous studies in the SME context have measured internationalization level by a single variable, which is the proportion of the firm's export sales to total sales (e.g. Ren et al., 2015). This overly simplistic approach to measuring DoI was considered as one cause of inconsistencies found across relevant studies in the international business literature (Pangarkar, 2008). We believe that internationalization is a more complex issue to be measured by a single variable. Instead, it should be measured through a construct that covers other aspects of the internationalization level as well. Although there were some constructs developed by previous studies (i.e. Reuber & Fischer, 1997; Sullivan, 1994) in the large multinational company context, they are not suitable measures for SMEs. Some of the items in the existing constructs may not be relevant to SMEs, in particular in the emerging markets, such as questions regarding foreign direct investment or number of foreign employees (Reuber & Fischer, 1997). In this research, a combination of some items in the existing constructs (i.e. Manolova, Brush, Edelman, & Greene, 2002; Ruzzier, Antoncic, & Hisrich, 2007; Sullivan, 1994) that are applicable to the SME context were used to measure different dimensions of internationalization for SMEs. The items used to measure the DoI construct in our study are 1) entry mode 2) years of internationalization 3) export value 4) number of countries exporting to 5) psychic dispersion 6) top managers' international experience (number of trade fairs, expos, shows attended and number of business trips attended) 7) global vision (*overall, my company has a global orientation… overall, my company has a domestic orientation*) (Manolova et al., 2002; Sullivan, 1994). Cronbach's alpha for DoI is 0.828, which is higher than the suggested critical value.

The mediating factors in our model are EO and MO. *Entrepreneurial Orientation* is measured by a traditional eight-item scale originally developed by Covin and Slevin (1989) and refined by Naman and Slevin (1993). This construct includes three important aspects of EO, proactiveness, innovativeness and risk taking. *Market Orientation* is measured by a ten-item scale developed by Deshpande and Farley (1998). This scale focuses on firms' commitment to customer satisfaction. We measured Cronbach's alpha for EO as 0.7 and for MO as 0.985.

In order to isolate the impact of the variables on the tested relationships in the model, we need to control for some variables that might have an effect on the firm's innovation performance, such as the size and age of the firm, goods produced and the industry. We measure firm size through the number of employees in order to control for that effect. We also include firm age and goods produced, such as consumer, intermediate and business, as other control variables (Wadhwa & Kotha, 2006). Finally, we control for the sector in which SMEs are operating. The Appendix includes a list of all construct measures.

3.6. Model estimation

We used a partial least squares (PLS) analysis method to validate and test the conceptual model depicted in Fig. 1, applying Smart-PLS (Ringle, Wende, & Will, 2005). The PLS approach as a variance-based structural equation modeling technique is more suitable than a covariance-based one for explorative research aimed at testing and validating models, structural measurement models and small samples, while avoiding some of the restrictive assumptions enforced by covariance-based models (Hair, Ringle, & Sarstedt, 2011, 2012; Henseler, Ringle, & Sinkovics, 2009). Moreover, this approach enables the simultaneous analysis of the outer (measurement) and inner (path) models with combined formative–reflective constructs (Chin, Peterson, & Brown, 2008). Moreover, as the unbalance of the measures for different variables exists in this study, this approach helped us to solve this issue since it can handle construct with varying number of items including the one with a single item (Hair, Hult, Ringle, & Sarstedt, 2014).

More specifically, several authors recommend that there should be at least 10–20 times as many observations as variables (e.g. Chin, 1998); otherwise covariance-based estimates can be very unstable. Our model contains 34 manifest variables; thus, we need a minimum sample size of 340. Given our sample size of 235 and the presence of a formative construct (EO), the use of PLS over covariance-based methods seemed more appropriate. Furthermore, PLS avoids two serious problems, inadmissible solutions and factor indeterminacy, associated with complex models such as ours (Fornell & Bookstein, 1982). Our model and research setting are explorative and complex, since we investigate whether EO and MO play key mediating roles between DoI and innovation performance in the specific context of SMEs within the UAE, which has not yet been studied in the international SME literature.

4. Findings

4.1. First-order measurement model

All the indicators had factor loadings higher than the benchmark level of 0.50 ($p < .001$), except for the following items: “FSTS” and “IMPORT” in “DoI construct” (loading = 0.34 and loading = 0.24, respectively). Thus, these two items were excluded from further analysis in order to provide support for convergent validity (Bagozzi & Yi, 1988). Convergent validity was also supported with the scores of the average variance extracted (AVE) of all constructs exceeding the benchmark of 0.50 (Fornell & Larcker, 1981). In addition, the composite reliability (CR) of all constructs exceeded the benchmark level of 0.70. Specifically, the CR scores range from 0.87 for DoI to 0.99 for proactiveness. Furthermore, we ran additional exploratory factor analyses in order to inspect for possible cross-loadings. No significant (> 0.40) cross-loadings were present in our data set. Consequently, we

Table 2
Bivariate correlations.

	1	2	3	4	5	6	7	8	9	10
Age	**1.00**									
DOI	0.55	**0.71**								
Goods	0.13	−0.1	**1.00**							
Innovativeness	0.12	0.28	0.12	**0.98**						
Industry	0.11	0.31	−0.01	0.05	**1.00**					
MO	0.04	0.20	−0.02	0.28	−0.01	**0.94**				
Proactiveness	−0.06	−0.01	−0.22	−0.08	−0.16	0.13	**0.94**			
Risk taking	0.04	0.10	0.06	0.08	0.05	0.15	−0.05	**0.99**		
Innovation	0.10	0.29	0.09	0.98	0.05	0.28	−0.08	0.08	**0.23**	
Size	0.31	0.56	0.23	0.29	0.12	0.16	−0.14	0.06	0.30	**1.00**

Note: Bold numbers on the diagonal indicate the square root of the AVE.

conclude that the measurement items are robust in terms of their internal consistency and reliability.

The discriminant validity of all constructs was assessed in two ways. One way of assessing discriminant validity is by comparing the square root of the AVE for a construct with the correlation between the construct and any other construct. As shown in Table 2, all reflective measurement constructs used in this study fulfill this requirement, supporting discriminant validity (Fornell & Larcker, 1981). Discriminant validity was also examined by comparing the scores of individual correlations to their respective reliabilities (Gaski & Nevin, 1985). As presented in Table 2, no individual correlations were greater than their respective reliabilities, hence providing further support for discriminant validity. Finally, multi-collinearity was tested by using the variance inflation factor (VIF) index. The value of VIF for each independent variable ranged from 1.12 to 2.32, well below the typical threshold value for the VIF index of 10, suggesting that the proposed model was satisfactorily free of multi-collinearity. Taken together, these results lend sufficient confidence that the reflective measurement model fits the data well.

4.2. Formative second-order measures

EO was modeled as a first-order reflective and second-order formative construct (Type II), following the model specifications by Jarvis, MacKenzie, and Podsakoff (2003). In order to specify the hierarchical latent variable EO in PLS-SEM, the hierarchical components model was conceptualized through repeated use of the manifest variables (i.e. indicators) of the underlying first-order reflective constructs (Tenenhaus, Esposito, Chatelin, & Lauro, 2005).

The assessment of the measurement properties of the formative second-order index are different than those of the reflective measurement construct (e.g. Zacca, Dayan, & Ahrens, 2015). Since internal consistency and convergent validity are not applicable to formative constructs (Bollen & Lennox, 1991), multi-collinearity was tested using VIF, as suggested by Wilden, Gudergan, Nielsen, and Lings (2013). Thus, we summed the first-order constructs of EO because it exhibited more than acceptable CR (Spector, 1992). A calculation of VIF finds that the values of all first-order terms are below 2.50, which is well below the cut-off value of 5 (Hair et al., 2011). Lastly, as seen in Fig. 2, the component weights indicated that each summed dimension was an important determinant of the respective higher-order construct.

4.3. Structural model and hypothesis testing

We used the bootstrapping method (500 resamples), as suggested by Chin (1998), to generate standard errors and t-statistics and examine the variance explained (R^2). The path coefficients for the conceptual model as well as the variance explained in the endogenous constructs are presented in Fig. 1.

The results of model testing showed that our model results in acceptable R^2 statistics (Chin, 1998): $R^2 = 0.28$ for innovation, $R^2 = 0.03$ for MO, and $R^2 = 0.32$ for EO. More specifically, the constructs included in the research model accounted for about 28% of the variance in innovation, 3% of MO, and 32% of EO. The main construct, innovation performance, and EO exhibit relatively high R^2 values, whereas MO shows a low R^2 value of < 0.10 (Chin, 1998).

H1 predicted that there would be a positive relationship between DoI and innovation. The results indicate that DoI was not significantly related to innovation ($\beta = 0.11$, $p > .05$), which does not provide support for H1. H2 and H3 predicted that there would be a positive relationship between DoI and MO, and DoI and EO, respectively. The results show that DoI were significantly related to both MO and EO ($\beta = 0.20$, $p < .01$ and $\beta = 0.18$, $p < .05$ for MO and EO, respectively; see Table 3). Thus, H2 and H3 were supported.

H4 and H5 predicted that there would be a positive relationship between MO and innovation, and EO and innovation, respectively. The results indicate that both MO and EO were significantly related to innovation ($\beta = 0.12$, $p < .05$ and $\beta = 0.36$, $p < .01$ for MO and EO, respectively; see Table 3). Thus, H4 and H5 were supported.

Regarding control variables, the results show that size has a significant impact on innovation ($\beta = 0.20$, $p < .01$), but other control variables do not have a significant impact on innovation ($\beta = 0.04$, $p > .01$; $\beta = 0.08$, $p > .01$; and $\beta = 0.02$, $p > .01$, for age, goods, and sector, respectively).

The bootstrapping procedures (Lee et al., 2012; Preacher & Hayes, 2004) were performed in order to test the mediating effects. More specifically, we examined the mediating effects of MO on the link between DoI and innovation, and of EO on the link between DoI and innovation. With respect to the mediating effects, the results are as follows: DoI–innovation (direct effect = 0.11, $p > .05$; indirect effect = 0.13, $p < .05$; total effect = 0.24, $p < .01$). Since the indirect effect of two mediators (MO and EO) cannot be calculated by using the bootstrapping method, the product coefficient approach (Bollen, 1987) was used to estimate each mediator's indirect effect, and Sobel (1982) tests were conducted to evaluate its level of significance. The results show that DoI on innovation through MO is 0.11 and through EO is 0.14. The Sobel tests indicate that the indirect effects of DoI on innovation via MO and EO are both significant at the 5% level, confirming that MO and EO fully mediate the impact of DoI on innovation.

5. Discussion

Emerging markets have had a growing impact on global trade. China was once known as an emerging market; now it has become the third biggest economy in the world plus the biggest exporter (Anonymous, 2017). During 2000–2010, two-thirds or more of world GDP growth occurred in emerging economies. Emerging markets are located where 85% of the world's population lives and where the potential for continued growth is high because average per-capita incomes are still only a fraction of that in the West (Sharma, 2012). This study responds to the calls for research on SME internationalization in emerging economies (Ibeh & Kasem, 2011; Kiss et al., 2012). Although

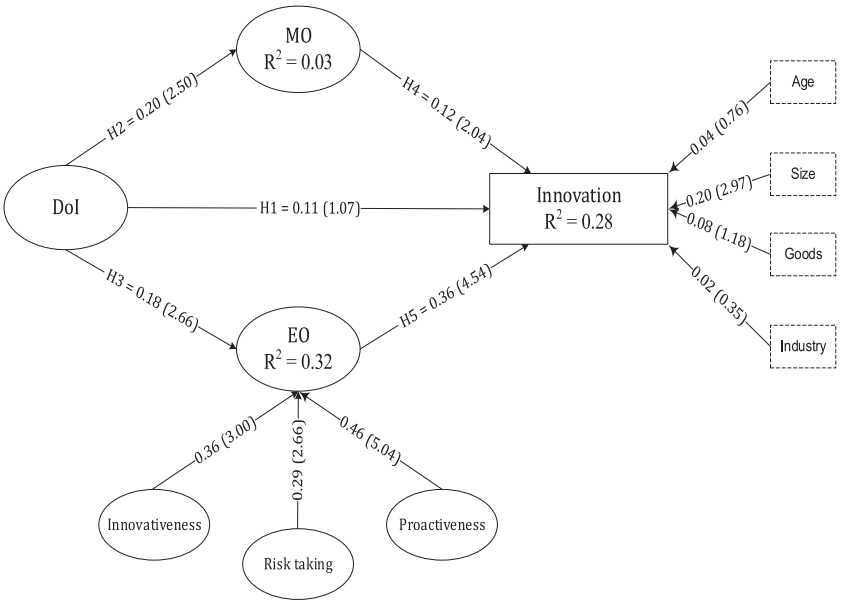

Fig. 2. PLS results.

Table 3
Path coefficients.

	Coefficients	T-statistic
DOI → EO	0.20*	2.50
DOI → MO	0.18*	2.66
EO → INN	0.12*	2.04
MO → INN	0.36*	4.54

* Represents significance at $p = .05$.

SMEs are engines of economic growth especially for emerging markets, they are not as big a part of value added. The lack of innovation in SMEs compared to big companies can be a major reason for that. Hence, improving the innovation performance of SMEs has a vital role for these businesses and the economies of emerging countries (Lee, Ozsomer, & Zhou, 2015). On the other hand, internationalization has become widespread among SMEs as well, due to the positive impact coming from the improvements made in communication technologies and the decreasing cost of transportation. Especially in emerging markets, SMEs increasingly participate in international activities day by day with the help of government support (Zhang, Knight, & Tansuhaj, 2014).

Both internationalization and innovation have received increasing attention in industrial marketing literature. The interest of B2B marketing literature has been steadily increasing on innovation and product development (Lindgreen, Di Benedetto, Geersbro, & Ritter, 2018). In particular, we have seen some recent attention on innovation capabilities of SMEs in B2B context (Brink, 2018; Eggers, Kraus, & Covin, 2014; Pervan et al., 2015). We have also seen increasing studies in the industrial marketing literature that examine the internationalization in the emerging country context (e.g. Kujala & Törnroos, 2018; Pervan et al., 2015). Both of these trends show the relevance and importance of both innovation and emergent market context in B2B market, which motivated us to study these phenomena.

Despite the studies about the link between internationalization and innovation (e.g. Ren et al., 2015), it remains unclear what capabilities firms generate from their internationalization efforts which in turn enable them to become more innovative. Understanding these generative mechanisms requires the examination of the mediators that play a pivotal role in delivering the innovation performance effect of internationalization. These mechanisms carry significant business implications in terms of benefiting from internationalization to deliver innovative outcomes. We address this gap by asking: *What are the mechanisms that allow firms to convert their internationalization efforts into innovation outcomes?* The answer to this question has significant implications for industrial marketing management theory and practice which we will discuss in the next paragraphs. In this study, market and entrepreneurial orientation were modeled as mediators in the relationship between internationalization and innovation performance. Then, we tested the proposed model in the context of an emerging market, the United Arab Emirates.

First of all, our study confirms that the internationalization of SMEs has a significant positive impact on innovation performance through mediating effects of MO and EO. This result is consistent with a recent study by Piperopoulos, Wu, and Wang (2018) showing that internationalization activities by emerging market firms enhance their subsidiaries' organizational learning and innovation performance. The competitive conditions of international markets force firms to innovate. However, different from the extant literature, our results showed that this impact is not direct. Our findings indicate that both MO and EO fully mediate the link between internationalization and innovation performance. This finding implies that internationalization has a positive impact on the innovation performance of SMEs only if this experience makes them more market and entrepreneurial oriented. This result may help in explaining the mixed evidence on the benefits of internationalization for innovation. While some studies did indeed find a positive link between exporting and productivity (Cassiman & Golovko, 2011; Love & Mansury, 2009), some others found no effect (Bernard & Jensen, 1999; Greenaway, Gullstrand, & Kneller, 2005). These contradictory results combined with our findings indicate that not all internationalization experiences produce positive consequences for innovation performance. Rather, it depends on how firms utilize their internationalization. Our findings demonstrated that firms need to be market and entrepreneurial orientated in order to realize the potential innovation benefits of internationalization. By doing this, we add to a more nuanced understanding of the innovation performance implications of internationalization.

The findings of this study emphasize the importance of MO and EO in the internationalization process. Internationalized firms are exposed to different cultures and ways of doing business compared to firms that are purely domestic. Moreover, in international markets, firms face more demanding and uncertain environments (O'Grady & Lane, 1996). This uncertainty and diversity help firms to understand the differences

between customers' expectations better and as a result to become more market oriented (Kafouros, 2006). More market-oriented firms are more prone to innovate (Küster & Vila, 2011) since MO implies trying new strategies in order to respond to changing customer needs and wants. This is highly supported by studies on SMEs in the industrial marketing context as well. Firm innovation performance has been found highly related to learning from customers (Eggers et al., 2014; Sok & O'Cass, 2011). Similarly, market orientation has been found as an acting mechanism for building innovation capabilities for SMEs (Merrilees, Rundle-Thiele, & Lye, 2011). When companies internationalize more, they acquire skills in identifying and exploiting market opportunities. As a result, participating in internationalization activities provides a learning advantage, which, in turn, makes them more proactive, likely to take more risks and more innovative. Firms that learn more effectively and become more entrepreneurial oriented than their competitors can excel at superior new product development and profitability (Day, 1994). Therefore, EO and MO complement each other in boosting innovation performance for internationalized SMEs, which is also consistent with the prior work of Baker and Sinkula (2009).

Our paper contributes to the literature in several ways. First, we investigate the mediating factors, MO and EO, of the relationship between internationalization and innovation. We provide empirical evidence for the effects of these mediating factors, which have not been studied in the literature. Our findings extend the literature by demonstrating that the innovation-enhancing effect of SMEs' internationalization is via MO and EO. Second, we explore this relationship in the context of emerging-market SMEs. As most of the literature has examined the issue for large multinationals from developed countries (Golovko & Valentini, 2011), our study provides new insights into this phenomenon by examining it in the emerging-market context. In sum, this study sheds new light on the mechanisms through which MO and EO can enhance firms' innovation performance in the emerging-market SME context.

6. Managerial implications

This study has several implications for managers. Today an increasing number of SMEs are going international in order to access a wider market and escape from the mature domestic market. International environment is challenging and many firms fail to succeed. However, there are also several benefits, other than increasing sales, of internationalization such as enhancing innovation. Our results have certain implications for SME managers in emerging markets for their survival in competitive international markets as well as gaining from this process in terms of innovation. SMEs in emerging countries usually deal with negative country-of-origin effect, therefore managers of those firms need to understand the potential benefits of internationalization in terms of innovation performance in order to survive in international markets. One of the key takeaways is the positive influence of international expansion on the innovation performance of emerging-country SMEs. Firms should see internationalization not only as a way of expanding sales, but also as a tool to improve firm innovativeness. However, managers should be careful that this impact is not a direct one and depends on how firms utilize internationalization. Our study shows the need for SMEs to adopt a market and entrepreneurial-oriented approach to achieve innovation performance success. In view of these results, having a higher innovation performance in the SME context will require responding to customer needs and wants and become more proactive and take more risks in exploiting market opportunities. For this reason, top management should make the effort to set the organizational values to acquire the skills that make SMEs more market and entrepreneurial oriented.

Managers of SMEs that operate in B2B market need to develop a clear strategy that leads the company to be more responsive to market demands and competitor actions. Especially the CEO and top management must show solid assistance in conveying the vision of market-orientation culture (Narver, 1991). Businesses need to participate in value creation activities and make necessary adaptations from this learning experience (Narver, 1991). Moreover, they need to better train and strongly motivate their employees to take risks and be open to new ideas and take the initiative to pursue new opportunities. Especially the employees that deal with international customers have a critical role in understating these customers varying needs and wants and taking entrepreneurial steps when necessary. These steps and initiatives help firm to become more innovative and serve those customers in the long term. Therefore, top management should encourage lower level managers and employees to have more interaction with customers, which is critical in B2B transactions, and give them enough decision-making power to take initiatives. Managers should empower their employees and build autonomy within the firm in order to get the most out of the firm's internationalization experience.

7. Limitations and future research

Our study has several limitations that present opportunities for future research. First, as our sample comprises SMEs in the UAE, future work assessing the impact of internationalization on the innovation performance of SMEs from other emerging countries could provide additional insights. Moreover, our model, which is supported in an emerging market context, can be tested in developed countries. Second, consistent with other studies (e.g. Rauch, Wiklund, Lumpkin, & Frese, 2009), we employed self-reported surveys. Although this may cause bias, we checked for common method bias and found that this is not a big issue for this study. Finally, we used single informants from each SME in collecting data. Key informants, especially those who work at senior management level, have the critical information that we needed for this study. Key informants have been found to report reliable and valid data for this kind of study (Henard & Szymanski, 2001). Besides, no difference was found between the mean responses of those key informants and other representatives (Wincent, Thorgren, & Anokhin, 2013). Third, number of patents may not have been a perfect measure of innovation performance as not all innovations can be patented. However, several studies in the literature demonstrated that number of patents is a good measure of innovation performance (Griliches, 1990; Hagedoorn & Cloodt, 2003; Hurtado-Torres et al., 2018; Ren et al., 2015).

Our study sheds light for future research as well. We proved that the impact of internationalization on innovation is more complex than the way it has been studied in the literature. We showed that MO and EO act as mediators of this relationship. We welcome future studies that continue our research by examining contingent factors such as networking capabilities with different stakeholders and competition both in the local and the international market and knowledge acquisition capability that might affect the link between firm's internationalization on its innovation performance. Also, more systematic collaboration with customers such as customer co-creation can be examined as another factor that might affect that relationship. In addition to that innovation capabilities can be investigated as it corresponds to radical innovation. The conditions that make the proposed impact more or less viable are still not fully known and require further research. On the other hand, we proposed a new model in this study and tested it in an emerging-country context. Further studies could test the model in other developing countries as well as in the developed-market context to see if it can be applied to those markets as well. We hope that this work motivates future researchers to further improve our understanding of the link between internationalization and innovation.

8. Conclusion

This research study investigated an understudied phenomenon and proposed a new model that provides a better understanding of the link

between internationalization and innovation for emerging-market SMEs. Overall, internationalization has a positive effect on innovation performance. In particular, this study demonstrates that this effect is indirect through MO and EO. Therefore, for internationalized SMEs, MO and EO are two basic pillars of obtaining better innovation performance.

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Appendix A. Measurement scales

Market orientation (Adapted from Baker & Sinkula, 2009, Deshpande & Farley, 1998).

Seven-point scale with 7 = *strongly agree* and 1 = *strongly disagree.*

(1) We continually monitor customers and competitors to find new ways to improve customer satisfaction.
(2) We freely communicate information about our successful and unsuccessful customer experiences across all business functions.
(3) Our strategy for competitive advantage is based on our understanding of customers' needs.
(4) We are more customer focused than our competitors.
(5) We poll end users at least once per year to assess the quality of our products and services.
(6) Our business objectives are driven primarily by customer satisfaction.
(7) We measure customer satisfaction systematically and frequently.
(8) We have routine or regular measures of customer service.
(9) I believe this business exists primarily to serve customers.
(10) Data on customer satisfaction are disseminated at all levels in this business on a regular basis.

Entrepreneurial orientation (Adapted from Baker & Sinkula, 2009, Naman & Slevin, 1993).

Seven-point scale, endpoint descriptions in italics.

(1) In general, the top managers of my firm favor… *A strong emphasis on the marketing of tried and true products or services… A strong emphasis on R&D, technological leadership and innovation.*
(2) In general, the top managers of my firm have… *A strong proclivity for low risk projects (with normal and certain rates of return… A strong proclivity for high risk projects (with chances of very high returns.*
(3) In general, the top managers of my firm believe in… *Gradual and cautious incremental behavior… Bold, wide ranging acts.*
(4) When confronted with decision-making involving uncertainty, my firm.. .. *Typically adopts a cautious, "wait and see" posture to minimize the probability of making costly errors… Typically adopts a bold, aggressive posture to maximize the potential of exploiting potential opportunities.*
(5) How would you characterize changes in your product or service lines in the past five years? *Changes have been minor.… Changes have been dramatic.*
(6) In dealing with competitors my firm… *Typically responds to actions which competitors initiate… Typically initiates actions to which competitors then respond.*
(7) In dealing with competitors, my firm… *Is very seldom the first business to introduce new products, services, administrative techniques, operating technologies,* etc.. .. *Is very often the first business to introduce new products/services, administrative techniques, operating technologies,* etc.
(8) In dealing with competitors, my firm… *Typically seeks to avoid competitive clashes, preferring a "live and let live" posture… typically adopts a very competitive "undo the competitors" posture.*

Degree of internationalization (DoI) (Adapted from Sullivan, 1994, Manolova et al., 2002)

(1) Entry mode (i.e. direct exporting, contracting, franchising)
(2) Years in internationalization
(3) Exports value
(4) Number of countries a firm export to
(5) Psychic Dispersion (measure through calibrating the dispersion of the regions that a firm engage in international activities)
(6) Top Managers' International Experience (TMIE)

i) Number of trade fairs, expos, shows attended
ii) Number of business trips attended

(7) Global Vision (Overall, my company has a global orientation… Overall, my company has a domestic orientation)

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