How international SME's vicarious learning may improve their performance? The role of absorptive capacity, strength of ties with local SMEs, and their prior success experiences

Abstract

This study investigates whether inter-firm relationships can raise innovation and overall performance during SME internationalization, focusing on how SMEs learn from firms in transnational markets and the nature of such relationships. It contributes to research by proposing the role of vicarious learning from networked firms in the host country to improve their absorptive capacity, innovation, and overall performance. In particular, this study proposes the moderating roles of the strength of ties with and prior success experience of SMEs in the host country market for enhancing international SMEs' vicarious learning to improve their absorptive capacity, innovation, and overall performance. Structural equation modeling was applied to a sample of 163 valid responses received from international SMEs operating in various industrial sectors in Saudi Arabia. The obtained results support the significantly positive role of international SMEs' vicarious learning from local firms in developing their absorptive capacity and enhancing their innovation and overall performance. However, international SMEs must have strong ties with local firms and learn from such firms' prior success experiences to derive these benefits fully.

Keywords: Vicarious learning, absorptive capacity, strength of ties, prior success experience, innovation, and performance.

1. Introduction

Give me a fruitful error any time, full of seeds, bursting with its own corrections.
You can keep your sterile truth for yourself.

-Vilfredo Pareto

Small and medium-sized enterprises (SMEs) are considered to be the engines of economic growth. Increasingly, SMEs play a key role in generating employment opportunities, producing value-added products, and bringing innovations to national economies (OECD, 2017). The mounting importance of SMEs has captured the attention of scholars over recent decades (e.g., Lechner, Dowling, & Welpe, 2006; Lin & Lin, 2016; Narver & Slater, 1990; Pelham & Wilson, 1996). Governments around the globe promote the SME sector to capitalize on the entrepreneurial potential of innovations and thus grow their economies. SMEs are also increasingly entering international markets to exploit the potential of their innovative products and services in a larger marketplace (Osano, 2019). However, managing businesses in host countries is an uphill task, especially in countries where the cultural, political, economic, and legal systems are different from those of the home country of SMEs. SMEs strive to adapt to transnational markets to compete, grow, and survive in host countries (Ali, Sun, & Ali, 2017; Lin & Lin, 2016). Forkmann, Henneberg, and Mitrega (2018) hold that business relationships and embedding networks provide firms with crucial resources for their success in transnational markets. To this end, networking with local businesses that have crucial knowledge about the host country market can be instrumental. Naude, Zaefarian, Tavani, Neghabi, and Zaefarian (2014) argue that SME managers spend a significant amount of time actively networking with other firms, that external networking is vital for improving SMEs' performance in host markets,

and that SMEs must develop networks with local firms to access their knowledge and learn from their successes and failures to compete in host countries.

Indeed, increasing environmental uncertainties and complexities are forcing firms to develop strong business networks, including strategic alliances, joint ventures, franchising, and similar arrangements to access and learn from competitors' knowledge and skills, which would otherwise not be possible (Koch & Windsperger, 2017). This is especially important for firms operating in the transnational business environment, particularly in host countries where the cultural, economic, legal, and business environments are more unpredictable and different from those in the home country. Such organizations are increasingly improving their learning capabilities to adapt to dynamic and uncertain markets, thereby creating competitive value and improving performance (Kohtamäki, Partanen, Parida, & Wincent, 2013). Madsen and Desai (2010) also emphasize the importance of learning from the successes and failures of networked peers to improve organizational learning and help international SMEs adapt to the host country's business conditions. Similarly, the strength of ties with firms in the network is also important in terms of being able to derive greater benefits from their knowledge and improve SMEs' innovation and overall performance.

Although the extant literature suggests associations among absorptive capacity (ACAP), inter-firm networking, innovativeness, and performance (Apriliyanti & Alon, 2017; Baškarada et al., 2018; Gao et al., 2017; Marques & Ferreira, 2009; Roberts et al., 2012; Song et al., 2018; Zou et al., 2018), there is a lack of support for this association in the context of SMEs' internationalization. In particular, little empirical research in the context of transnational markets explains the role of success- and failure-based experiences and the strength of ties needed to improve international SMEs' ACAP, innovation, and overall performance. Lui, Shen, Ding, and

Zhao (2017) examine the role of the strength of ties in improving the ACAP and innovation of SMEs; however, this study proposes the strength of ties as a moderating variable that may provide more interesting and useful implications for theory and practice. To the best of our knowledge, no previous study has used the strength of ties and success experience of local firms in the context of transitional SMEs to improve their ACAP from vicarious learning from local firms in the host country market. As Johanson and Vahlne (2006, 2009) hold, it is also important to investigate the role of vicarious learning in improving firms' internationalization and the factors that help international SMEs enter and succeed in transnational markets.

Drawing on the recent literature, for instance, Divenney et al. (2019) hold that during internationalization, many SMEs fail in the global market because of a lack of networking abilities in host country markets and the talent to learn from the success or failure of firms in the network. Madsen and Desai (2010) advocate the importance of learning from the success or failure of oneself and one's peers to improve organizational learning. Jiang, Wang, and Feng (2020) also emphasize the importance of the strength of ties with external firms for SMEs' tacit knowledge management. Cliquet et al. (2019) suggest further research to understand the new theoretical perspectives of inter-firm networking to improve firms' innovation. Similarly, Su et al. (2020) underline the importance of examining the enabling factors that help SMEs enter transnational markets. Hence, a number of studies highlight the importance of identifying the factors that can augment the vicarious learning of international SMEs through networking with local firms in the host country to improve their innovation and overall performance. The current study aims to bridge this important theoretical gap by proposing a conceptual model to examine the role of international SMEs' vicarious learning from host country firms in improving their ACAP, innovation, and overall performance. In particular, we propose the moderating role of the

strength of ties and prior success experiences of host country SMEs in improving international SMEs' ACAP from vicarious learning.

The current research invokes organizational learning theory to explain international SMEs' networking approach in host markets and vicarious learning for improving their ACAP to enhance their innovation and overall performance. Organizational learning theory suggests that organizations collect information to reduce uncertainty (Sullivan & Nonaka, 1986). In this study, international SMEs network with local firms to acquire the required local market information from host country firms and use it to reduce uncertainty and improve their ACAP, innovation, and overall performance. The intended contributions of this study are manifold. First, it examines the role of international SMEs' vicarious learning from local firms in improving their ACAP, innovation, and overall performance in transnational markets. Second, this study examines the moderating roles of the strength of ties and prior success experiences of local SMEs in enhancing international SMEs' ACAP through vicarious learning. Finally, it provides an important policy framework that could help managers of transnational SMEs improve innovation and overall performance in host countries by learning from the successful experiences of firms in host countries and improving the strength of ties.

2. Conceptual background

Uncertain and dynamic market conditions force firms to transform their business practices from traditional competitive strategies to cooperative strategies (Cliquet et al., 2019). Companies are restructuring their business models and value chain configurations to innovate their products

and processes to sustain business performance (Sarasvathy, 2001). The digitization of the global economy is encouraging firms to use inter-firm networking as a primary source to reduce uncertainty and improve value creation (Aarikka-Stenroos & Rittala, 2017; Cliquet et al., 2019; Forkmann, Henneberg, & Mitrega, 2018; Pagani & Pardo, 2017). This is particularly important for SMEs entering international markets, as Tolosoy and Agndal (2010) argue that small firms often cannot transfer their resources/capabilities outside domestic markets. Therefore, it is necessary for them to network with local firms in host markets to learn from their capabilities.

The learning of SMEs in the host market from local peers' success and failures is an important resource (Madsen & Desai, 2010). International SMEs absorb knowledge resources from the successful business practices of local firms in their host market network to improve their innovation and overall performance (Schweisfurth & Raasch, 2018). In this regard, the moderating roles of the prior successful experiences of and strength of ties with local firms is important for enhancing the ACAP of international firms from vicarious learning.

2.1 Vicarious learning

International SMEs are endowed with the knowledge of their founding entrepreneurs (Agarwal et al., 2004; Dencker et al., 2009; Helfat & Lieberman, 2002; Posen & Cohen, 2013). However, in the context of international markets, this knowledge is insufficient to sustain and improve performance levels (Posen & Cohen, 2013). New entrants bridge this knowledge gap by leveraging their initial capabilities using experiential learning (Holcomb et al., 2009) and by extracting inferences from past experiences and using them to guide their present and future behaviors (Argote, 2012; Argote & Miron-Spektor, 2011). They also learn vicariously from their peers to leverage the best practices of successful firms in host country markets. Considering the

importance of vicarious learning, this study examines how it improves the ACAP, innovation, and overall performance of international SMEs in host country markets.

Senge (1990) defines vicarious learning as managing the balance of cognitive and behavioral elements that combine patterns of thinking and actions. He argues that organizational vicarious learning occurs "where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, where people continually expand their capacity to create the results they truly desire, and where people are continually learning how to learn together" (Senge, 1990, p. 3). Similarly, Azmi (2008) believes that vicarious learning is a top priority in today's business world because it raises competitive advantage by enhancing organizational performance and effectiveness. A number of scholars find that vicarious learning from others' experiences is an important way to acquire vital, necessary knowledge (Ingram & Baum, 1997; Kim & Miner, 2007; Miner & Haunschild, 1995). Firms are increasingly using vicarious learning to replicate the best practices, strategies, and designs of successful organizations (Alashwal et al., 2019; Burns & Wholey, 1993; Collins & Porras, 1994; Connell & Cohn, 1995; Glavas et al., 2019; Haunschild & Miner, 1997; Peters & Waterman, 1982; Posen et al., 2013). Recent research has focused on vicarious learning from successful organizations to take advantage of their best practices (Kim, 2000; McGrath, 1999; Sitkin, 1992) and vicarious learning from the failure experiences of other firms to serve as wake-up calls and to avoid similar mistakes (Ingram & Baum, 1997; Miner, Kim, Holzinger, & Haunschild, 1999). Vicarious learning is particularly important for firms operating abroad in countries where socioeconomic and cultural factors are different from those in the home country of SMEs.

2.2 SMEs' ACAP

ACAP is an organization's ability to identify, assimilate, transform, and exploit the knowledge available in the environment during the learning process (Cohen & Levinthal, 1989, 1990; Lane & Lubatkin, 1998; Lane, Koka, & Pathak, 2006; Zahra & George, 2002). Cohen and Levinthal (1989, 1990) develop the concept of ACAP in the fields of knowledge management, organizational learning, and innovation management (Flatten et al., 2011). Zahra and George (2002) define ACAP as "a set of organizational routines and processes by which firms acquire, assimilate, transform and exploit knowledge to produce a dynamic organizational capability" (p. 186). ACAP is a dynamic capability pertaining to knowledge creation and use that enhances a firm's ability to gain and sustain competitive advantage (Zahra & George, 2002). Zahra and George (2002) distinguish four dimensions of ACAP. First, knowledge acquisition refers to the proactive initiatives implemented by the project to identify and collect relevant information critical to its operations from external sources. Second, knowledge assimilation is the sense-making process whereby this information is analyzed, processed, and interpreted to support project objectives. Third, knowledge transformation is the process by which new knowledge is combined with existing knowledge and opportunities for improvements are identified. Finally, knowledge exploitation is the process of leveraging newly acquired insights to help achieve the organization's learning objectives. Zahra and George (2002) subdivide these four dimensions of ACAP into potential absorptive capacity, which comprises knowledge acquisition and assimilation, and realized absorptive capacity, which comprises knowledge transformation and exploitation. Schweisfurth and Raasch (2018) identify two directions of ACAP: need-knowledge ACAP and solution-knowledge ACAP. These dimensions of ACAP are well suited for this study, which investigates the relatively under-investigated role of ACAP in improving

innovation and overall performance in SMEs (Gray, 2006; Liao, Welsch, & Stoica, 2003; Muscio, 2007; Zahra, Ucbasaran, & Newey, 2009).

2.3 Strength of ties with firms in the network

The literature on inter-firm networking largely depends on Coleman's (1990) social capital and social network arguments. Coleman focuses on the emergence of effective norms that promote trustworthiness and strengthen social capital and ties between individuals and organizations (Rost, 2011). The role of the strength of ties in gaining knowledge from firms in organizational networks is important and has become a key research theme (Rost, 2011; Seidle, 2013). Naude et al. (2014) hold that external networking is critical for improving SME performance, but that the strength of ties with firms in the network yields greater benefits. In the context of international markets, networking with local firms is an important source of entrepreneurial learning for organizations (Szarka, 1990). Strong ties are important for organizations seeking to acquire new knowledge from other organizations and improve their innovative capability and performance (Roberts, 2000). Hansen (1999) also believes that strong ties are important for acquiring complex knowledge from other organizations. Interestingly, some researchers such as McFadyen and Cannella (2004) and Uzzi (1997) report an inverted U-shaped relationship between the strength of ties and new knowledge acquisition; that is, having strong ties is useful within a certain period, but becomes "over-embedded" afterward, with the acquisition of new knowledge diminishing as firms become too similar or familiar with each other. However, in this study, we propose that strong ties are vital for international firms to improve their vicarious learning and ACAP from local firms in the host country market.

2.4 SMEs' prior success experiences

The role of the prior success and failure experiences of other firms in a network, as another area of knowledge that international SMEs might take advantage of, has also captured the attention of researchers. The majority of research on vicarious learning has focused on the replication of the routines, strategies, and structures of successful organizations (Burns & Wholey, 1993; Conell & Cohn, 1995; Haunschild & Miner, 1997). Ingram and Baum (1997) argue that firms learn from the strategies behind successful experiences and avoid those behind failure experiences to benefit from best practices and avoid making the same mistakes themselves. Similarly, Madsen and Desai (2010) hold that firms can significantly reduce their failure rate and thus costs by learning from the failures of other organizations in their industry. We therefore propose in this study that the prior success experiences of local firms used by international firms play an important moderating role in the benefits the latter derive from vicarious learning and ACAP in the host country market.

3. Hypotheses development

3.1 Vicarious learning and SMEs' ACAP

As mentioned above, vicarious learning refers to learning from others through observation and experiential inferences. It can play an important role in improving a firm's competitiveness and innovative capability if the firm has adequate capacity to acquire, assimilate, transform, and exploit the knowledge gained from external sources (i.e., firms in the network). Azmi (2008) believes that vicarious learning improves a firm's competitive advantage by enhancing its organizational performance and effectiveness. Vicarious learning competitiveness improves a firm's ACAP to learn and absorb from the best practices of other firms in the network. The

literature on ACAP has explored several dimensions of firms' technological capabilities, including the factors determining their ability to access, assimilate, acquire, transform, and exploit new knowledge.

Although early empirical studies focused on large firms and high-tech industries, there is growing interest in SMEs. Indeed, because of SMEs' limited resources and R&D activities, they often network with external organizations to overcome the constraints of their internal knowledge resources (Muscio, 2007). Muscio (2007) argues that SMEs' ACAP depends on their ability to establish collaborations with external organizations; that is, the greater SMEs' tendency to develop strong collaborations with other peer organizations in their network to gain the necessary knowledge from them, the greater is their ACAP. Similarly, Lane and Lubatkin (1998) hold that the ability of firms to learn from each other in a network depends on the similarity of their knowledge resources and structures, which improves their ACAP. Likewise, Posen and Chen (2013) argue that SMEs can improve their ACAP by capturing new knowledge from outside, reducing the need to find this knowledge when searching for solutions. Posen and Chen (2013) also suggest the role of experience in the identification and utilization of external knowledge.

Although some research has examined the role of vicarious learning in improving ACAP, to the best of our knowledge, there is little empirical evidence in the context of transnational SMEs. The current study bridges this important gap by examining the role of international SMEs' vicarious learning from local firms in host markets for improving their ACAP to acquire, assimilate, transform, and exploit knowledge, need-knowledge, and solution-knowledge from local SMEs. Therefore, we propose the following hypothesis:

H1: International SMEs' vicarious learning from local SMEs raises their ACAP.

3.2 Vicarious learning and the innovation of SMEs

Vicarious learning from other firms in a network is an important source of external knowledge for firms (Ingram & Baum, 1997; Kim & Miner, 2007; Miner & Haunschild, 1995). Firms persistently use vicarious learning to adopt the best practices of successful firms to take advantage of their experience (Burns & Wholey, 1993; Collins & Porras, 1994; Connell & Cohn, 1995; Haunschild & Miner, 1997; Peters & Waterman, 1982). In this way, vicarious learning from peer organizations plays an important role in improving a firm's innovation. Czepiel (1975) and Sahal (1982) argue that vicarious learning involves attempting to learn about the strategies, administrative practices, and technologies of other organizations. In this process, firms learn from the innovative ideas of other SMEs or take a lead from their ideas to improve their own innovativeness. Although there is an argument in the organizational learning literature that gaining second-hand experience through vicarious learning is no substitute for first-hand learning (Huber, 1991), SMEs learn from others because of the paucity of their resources and range of socioeconomic factors in host country markets. This is also in line with the resource-based view that SMEs from emerging economies acquire new knowledge from firms in advanced countries during the internationalization process, which in turn improves their innovativeness (Kazlauskaite, Autio, Gelbuda, & Sarapovas, 2015; Suarez-Ortega, García-Cabrera, & Knight, 2015). Therefore, this study argues that international SMEs in Saudi Arabia learn from the best practices of local firms, which improves their innovation in the local market. Consequently, we propose the following hypothesis:

H2: International SMEs' vicarious learning from local SMEs raises their innovation.

3.3 ACAP and the innovation of SMEs

ACAP plays an important role in improving innovation (Ali, Seny Kan, & Sarstedt, 2016; Ali, Ali, Al-Maimani, & Park, 2018; Fosfuri & Tribo, 2008; Liu, Shen, Ding, & Zhao, 2017). In today's competitive business environment, internal organizational knowledge cannot generate better innovation. Therefore, organizations invest significant efforts in acquiring, assimilating, transforming, and exploiting knowledge from external sources. Investment in ACAP not only improves organizational learning capacity but also increases innovation (Cohen & Levinthal, 1989, 1990). There is considerable evidence of the role of ACAP in improving a firm's innovative capabilities and innovation (Daghfous, 2004; Hughes, Morgan, & Ireland, 2014; Subramaniam & Youndt, 2005; Wu & Shanley, 2009). However, less research is available for SMEs, particularly the role of international SMEs' ACAP in improving their innovation in host countries. Albort-Morant et al. (2018), Ali et al. (2016), and Al Mamun et al. (2017) find a positive association between ACAP and firm innovativeness. Based on these premises, the current study proposes the following hypothesis:

H3: International SMEs' ACAP raises their innovation.

3.4 ACAP and the overall performance of SMEs

ACAP plays an important role in improving the overall performance of SMEs. The acquisition, assimilation, and transmission of need-knowledge and solution-knowledge (Schweisfurth & Raasch, 2018) by SMEs increases their competitive advantage and ultimately their organizational performance (Lane et al., 2006; Zahra & George, 2002). A number of studies have found a positive association between ACAP and organizational performance. For instance, Al Mamun et al. (2016) find a significant positive association between ACAP and performance

among micro-enterprises in Malaysia. Flatten et al. (2011) also show a positive association between all dimensions of ACAP, including acquiring, assimilating, transforming, and exploiting knowledge, and organizational performance in the SME sector. Likewise, Ali et al. (2016) observe strong associations among firms' ACAP, innovativeness, and overall performance. In their important studies, Morgan and Turnell (2003) and Murray and Peyrefitte (2007) propose that firms can improve overall performance by exploiting their externally absorbed knowledge to develop innovative products and services. Ali, Musawir, and Ali (2018) also hold that higher levels of ACAP lead to higher organizational performance. Similarly, Mamun et al. (2017) hold that SMEs' ACAP is positively related to firm performance. However, although the previous literature provides evidence on the role of ACAP in improving firm performance, less is known about the extent to which ACAP derived through vicarious learning from networked firms in the transnational market improves firm performance in international markets. Therefore, this study proposes the following hypothesis:

H4: International SMEs' ACAP through vicarious learning in the transnational market raises their overall performance.

3.5 SMEs' innovation and overall performance

The association between a firm's innovation and its overall performance is clear. Much of the literature confirms the relation between innovativeness and firm performance. For instance, Marques and Ferreira (2009) hold that innovativeness gives firms a competitive advantage, which in turn improves their financial and overall performance. Similarly, Newbert (2007), Mogollón and Vaquero (2004), Porter (1994), Roberts and Amit (2003), Short, Ketchen, Palmer, and Hult (2007), Teece and Pisano (1994), and Tidd, Bessant, and Pavitt (2001) argue that

innovativeness improves organizational performance. Likewise, Ali et al. (2016) find a positive association between a firm's innovativeness and overall performance. Finally, Rajapathirana and Yui (2018) observe a positive association between SME innovativeness and overall performance, particularly for international SMEs operating in foreign markets. Therefore, we propose the following hypothesis:

H5: International SMEs' innovation raises their overall performance.

3.6 Moderating role of the strength of ties with local SMEs

The strength of ties plays an important role in improving the ability of SMEs to learn from firms in the network and improve their learning outcomes. Although the strength of ties is an important topic in the inter-firm networking literature, sparse research examines the association between the strength of ties and ACAP. Hansen (1999) argues that strong ties between firms facilitate the knowledge transfer process, allowing SMEs to improve both the outcomes of vicarious learning from other firms in their network and their capacity to absorb important knowledge to improve their innovation. Hansen (1999) also claims that both strong and weak ties affect the ACAP of firms in a network: when knowledge is complex, strong ties are important for acquiring the necessary knowledge from other organizations. Likewise, Lui et al. (2017) find positive associations among the strength of ties, ACAP, and innovation, where strength of ties is the independent variable, ACAP is the mediator, and innovation is the dependent variable. Hence, some research examines the role of the strength of ties on different variables, including innovation, knowledge transfer, and ACAP. For instance, Khachlouf and Quilin (2018) examine the association between a range of strength of ties in improving knowledge transfer among managers in Tunisia.

Although the literature provides evidence on the role of the strength of ties in improving knowledge sharing, ACAP, and innovation, less empirical evidence examines the moderating role of the strength of ties. Li and Liu (2015) examine the moderating role of the strength of ties on the association between knowledge diversity and creativity in the tourism industry. Similarly, Liu (2017) finds a moderating role of business ties in improving business and market performance through social capital. This study corresponds to previous studies that find a moderating role of the strength of ties in improving innovation and business outcomes. We therefore argue that the strength of ties moderates the relationship between the vicarious learning of international SMEs from transnational firms in the host country market for improving ACAP. We assume that strong tie strength is important to yield better knowledge-absorbing outcomes during the vicarious learning process. As Li and Liu (2015) hold, the cooperation derived by maintaining strong ties with firms in a network can yield great knowledge gains. Based on the above theoretical discussion, we also propose that the relationship between international firms' vicarious learning and their ACAP depends on the strength of their ties with local firms; that is, the stronger their ties with local SMEs, the more they can learn, absorb, and benefit from the latter's local market experiences. Therefore, we present the following hypothesis:

H6: The strength of ties with local SMEs moderates the relationship between international SMEs' vicarious learning and their ACAP.

3.7 Moderating role of the prior success experiences of local SMEs

Vicarious learning from other organizations' experiences is an important way for firms to acquire the necessary knowledge (Ingram & Baum, 1997; Kim & Miner, 2007; Miner & Haunschild, 1995). Many studies hold that the replication of positive experiences, strategies,

structures, and routines of successful organizations is a rich source of learning for firms (Burns & Wholey, 1990; Argote & Epple, 1993; Connell & Cohn, 1995; Haunschild & Miner, 1997; Kim & Miner, 2007). Thus, vicarious learning from other successful organizations can yield great knowledge benefits for firms; it can also improve their needs as well as solution-knowledge ACAP and innovation (Rost, 2011). Madsen and Desai (2010) hold that vicarious learning from the successful practices of peer firms is an important source for improving organizational outcomes.

Several studies have examined the role of prior success experience in improving the outcomes of vicarious learning for organizations (e.g., Greve, 1998, 2000). However, they examine the role of vicarious learning as a explanatory variable. To the best of our knowledge, there is little theoretical and empirical evidence on the moderating role of prior success experience on the association between vicarious learning and firms' ACAP in the context of international and local SMEs. Further, no direct empirical evidence is available on the moderating role of prior success experience in improving ACAP during vicarious learning by firms in transnational networks. We argue that like the strength of ties, given the nature of prior success experience, it would be interesting to examine its moderating role on the association between vicarious learning and ACAP. We propose that a moderating role of prior success experience increases need- and solution-knowledge ACAP during vicarious learning by international SMEs in transnational markets. Therefore, we propose the following hypothesis:

H7: The prior success experiences of local SMEs moderate the relationship between international SMEs' vicarious learning and their ACAP.

3.8 Conceptual model

Figure 1 presents the conceptual model for this study. The dependent variables are SMEs' innovation and overall performance. The independent variable is international SMEs' vicarious learning from local firms that has a direct influence on the firm's ACAP and innovation. International SMEs' vicarious learning from local SMEs also has an indirect influence on the former's innovation through their ACAP. We also propose the moderating role of the strength of networking ties with local firms and prior success experiences of local firms on the relationship between international SMEs' vicarious learning and their ACAP. The hypotheses proposed in this study are depicted in the conceptual model, which are positive in nature, as shown in Figure 1.

Insert Figure 1 here

4. Research methods

4.1 Sample and data

In this research, data is collected from international SMEs operating in Saudi Arabia and networked with local firms; questionnaires were sent to 285 international SMEs in different cities of Saudi Arabia. A total of 169 responses were received, of which six were incomplete and therefore excluded from analysis. The distribution of the final sample of firms in terms of ownership, industry, firm size (number of employees), and region is depicted in Table I.

Insert Table 1 here

4.2 Measures

The scales used to measure the different constructs in this study were taken from previous studies. Some of them were further adapted to satisfy the needs of the study. In this study all the measures were modeled as composite and as what Henseler (2017) refers artifacts or measures built or designed by researchers and are unlike the classic effect indicators known as factors (Rigdon, 2016). The instrument used to measure vicarious learning was taken from Myers (2015). The scale of vicarious learning was formed as unidimensional and reflective first-order construct. Mayers (2015) used two items to measure vicarious learning at an individual level. We therefore adapted these to measure SMEs' vicarious learning from local firms in a host country network.

The ACAP measurement scale was adapted from the work of Schweisfurth and Raasch (2018), in accordance with Lowik et al. (2012). Also, in accordance with Schweisfurth and Raasch (2018), two direction of ACAP is consistent with three dimensions of ACAP: recognition, assimilation, and application of knowledge. Originally, ACAP is proposed to be four dimensions (Zahra, and George, 2002), later on, several studies consider ACAP to be a two-dimensional (Ali & Park, 2016, Leal-Rodríguez, Ariza-Montes, Roldán, and Leal-Millán, 2014) and three-dimensional construct (e.g. Lane & Lubatkin, 1998; Todorova & Durisin, 2007). Hence, like Schweisfurth and Raasch (2018), we operationalized ACAP as a second-order formative construct and used two directions of ACAP as two first-order reflective constructs that are: need-knowledge ACAP and solution-knowledge ACAP. Both first-order reflective constructs consisted of six items each. However, we modified the individual ACAP scale into one for SMEs' organizational ACAP, on the basis that international SMEs develop their need-knowledge ACAP and solution-knowledge ACAP from local firms in host country networks to

improve their learning about local market conditions. We asked SME managers to think about the exchange of knowledge when interacting with local firms in the host country's network while answering the ACAP questions. All items were measured on a five-point Likert scale ranging from strongly disagree to strongly agree.

Following the recent guidelines in Henseler (2017), Rigdon, Sarstedt, and Ringle (2017), Sarstedt, Hair, Ringle, Thiele, and Gudergan (2016), and van Riel, Henseler, Kemény, and Sasovova (2017), all constructs are modeled in Mode A, at the item and the first-order construct level except ACAP which is modeled as a causal-formative construct (Mode B) made up of two first-order reflective constructs: ACAP need knowledge and ACAP solution knowledge (Sarstedt, Hair, Cheah, Becker, & Ringle, 2019). Following Sarstedt et al. (2019) and Wright, Campbell, Thatcher, and Roberts (2012), the two-stage approach is used to estimate ACAP. In the first stage model, the latent variables of the two first-order constructs are estimated without the ACAP present. In the second stage model, the latent variables of the two first-order constructs served as manifest variables for ACAP in a separate second-stage analysis.

SMEs' innovativeness was formed as unidimensional and reflective first-order construct and measured on a five-item scale adopted from Hurley and Hult (1998). Overall performance was also formed as unidimensional and reflective first-order construct and measured on a three-item scale adopted form Akgun, Keskin, Byrne, and Aren (2007). The performance scale was subjective and included increases in market share, the growth rate, and the profitability of the firm over the previous three years compared with its competitors. The moderating variable strength of ties was measured on four dimensions: contact time; resources input; co-operation range; and reciprocity of the relationship, as developed by Liu et al. (2017). These dimensions are based on a framework proposed by Granovetter (1973) whose four dimensions of strength of

ties include relationship length, mutual confiding, reciprocal services, and emotional intensity. Granovetter's (1973) framework of strength of ties was designed for inter-personal relationships but is used extensively for inter-firm perspectives (Rindfleisch & Moorman, 2001; Rowley et al., 2000). In Liu et al.'s (2017) adapted scales, contact time reflects the frequency and length of contact with other network partners; resources' input reflects the extent of co-operation between the enterprise and its innovation partners more accurately than the emotional depth index does (Rowley et al., 2000); co-operation range is a reflection of inter-firm intimacy level with respect to willingness to share complex technology and additional information; and, reciprocity refers to the extent that the parties take active responsibility for the partner firm's well-being, as well as their own (Stanko et al., 2007). These four dimensions investigate a firm's innovative interactive activities with several types of organization: universities and research institutions; governments; financial institutions and intermediaries; suppliers; and customers and competitors. The scale was formed as unidimensional and reflective first-order construct and included four items. Each item used a five-point Likert-type scale from strongly disagree to strongly agree.

The instrument used to measure the second moderating variable prior success experience was adapted from Madsen and Desai (2010), who measured success experience based on the number of successful launches by an organization. During the pilot study, we found it difficult for the managers of international SMEs to give a specific number of successful launches by local firms in the network, so we formed this scale as structured unidimensional and reflective first-order construct and included items: "How would you describe the number of prior successful launches made by local SMEs in your network?; and, "How would you describe the prior direct experiences of successful products/projects launched by local SMEs in your network?" Both items were measured on a five-point Likert scale ranging from very low to very high and from

not successful at all to very successful, respectively. Hence, the scales measured both the number of successful launches by local SMEs and their success; and, they were customized to suit the context of local firms networked with international SMEs.

Following previous studies, several multiple contextual variables were introduced in the structural model as control variables. Specifically, in addition to the key hypothesized relationships, this study controlled for firm's size, annual revenue, ownership and industry types because these variables can affect SMEs absorptive capacity, innovative performance and overall performance (Camisón & Villar-López, 2011; Gölgeci & Kuivalainen, 2020; Huang, Chen, Zhang, & Ye, 2018, Lee & Tang, 2018; Yang & Tsai, 2019). Hence, this study controlled for firm's size, which was measured on an ordinal five-point scale as number of employees in SMEs. Similarly, the SMEs annual revenue was measured on an ordinal four-point scale as reflection of annual financial capability. This study also controlled for SMEs ownership and was measured on an ordinal four-point scale which reflected if SME belong to private enterprise, foreign capital, public enterprise or joint company. Finally, this study controlled for SMEs industry type and was measured on an ordinal six-point scale.

4.3 Statistical procedure

This study estimated the measurement and structure model relationships drawing on partial least squares–structural equation modeling (PLS-SEM) as a composite-based approach to SEM (Hair, Hult, Ringle, & Sarstedt, 2017a, Hair, Sarstedt, Ringle, & Gudergan, 2017b). Richter, Cepeda, Roldán, & Ringle (2016) have provided updated guidelines on why and when to use PLS-SEM. A surprising level of hostility towards PLS-SEM can be observed (Rönkkö & Evermann, 2013; Rönkkö, McIntosh, & Antonakis, 2015; Rönkkö, McIntosh, Antonakis, & Edwards, 2016). However, recently PLS-SEM has been widely accepted by the research

community, including authors, editors, and reviewers (Henseler, Ringle, & Sarstedt, 2014; Richter et al., 2016; Rigdon, 2016; Sarstedt et al., 2016). The following key points summarize the suitability of employing PLS-SEM in this study (Roldán & Sánchez-Franco, 2012). First, the objective of the conceptual model here is prediction orientation, testing complex behavior, and explaining the variance in key target constructs (SMEs' performance; Chin, 2010; Hair). Second, the research framework in this study shows complex behavior—that is, it contains six series of direct relationship and two moderating effects (Chin, 2010; Kurt, Yamin, Sinkovics, & Sinkovics, 2016; Patel, Manley, Hair, Ferrell, & Pieper, 2016; Richter et al., 2016). Third, most of the constructs in social sciences or organization and management research, including this study, are design constructs or artefacts (Henseler, 2017) that are likely to be composites, and PLS-SEM is appropriate for dealing with such constructs (Cepeda-Carrion, Cegarra-Navarro, & Cillo, 2019). Fourth, PLS-SEM is appropriate for avoiding bias estimation resulting in Type I and Type II errors because of the unknown nature of the data (Sarstedt et al., 2016). Finally, PLS-SEM is an appropriate technique for conducting moderation analysis (Hair et al., 2017a;b, Hair, Sarstedt, & Ringle 2019) where the option is available to complete an interaction effect with various options (Hair et al., 2017a; 2019).

5. Results

This study used the SmartPLS 3.2.7 program (Ringle, Wende, & Becker, 2015) to analyze the proposed conceptual model by selecting the PLS algorithm and basic settings such as a weighting scheme (path); the maximum number of iterations on the PLS algorithm is 300, with a stop criterion of $10-7$ (=1.0E-07) (Hair et al., 2017a). The significance of the path analysis, t-scores, p-values as well as the corresponding 95% bias-correlated and accelerated (BCa)

bootstrap confidence intervals were obtained by choosing a bootstrapping procedure (with a subsample of 5,000; using no sign changes) and 5% significance (one-tailed).

5.1 Measurement model

This study validated the measurement model by evaluating the standard criteria in Hair et al. (2017a), such as indicator loadings, internal consistency reliability, convergent validity, and discriminant validity (Chin, 2010), as follows below.

5.1.1 Indicator loadings

First, the assessment of the indicator loadings describes the extent to which the indicator is suitably explained by its respective latent constructs. This required evaluation of the factor loadings must be interpreted in principle as loadings in a factor analysis. As such, factor loadings should have significant values of ideally ≥0.70 in order to explain at least 50% of the indicator variance (Hair et al., 2017a), or significant values of ≥0.50 in exploratory research (Nunnally, 1978). As reported in Table 2, all the loaded indicators on their respective latent constructs were above the recommended minimum threshold value (i.e. ≥0.50). The significance of indicator loadings was confirmed by performing the bootstrapping technique, which provided t-statistic values above 1.96 ($p<0.05$, two-tailed-test) (Roldán & Sánchez-Franco, 2012), suggesting a high degree of indicator reliability.

5.1.2 Internal consistency reliability

Internal consistency reliability was assessed using Cronbach's alpha, composite reliability, and Dijkstra-Henseler's rho (ρA) as a measure of the homogeneity of a construct. A value of

≥0.70 is considered acceptable. For all latent constructs, the values of all three types of reliability were greater than the minimum threshold value (i.e. ≥0.70) and thus clearly met the requirements.

5.1.3 Convergent validity

Convergent validity was determined by assessing the average variance extracted (AVE) scores. Fornell and Larcker (1981) recommend an AVE score of ≥0.50, which indicates that 50% of the indicator variance can be accounted for. Consistent with this recommendation, all latent constructs had AVE scores of ≥0.50, as shown in Table 2.

Insert Table 2 here

5.1.4 Discriminant validity

This study employed the recently approaches for confirming discriminant validity (Hair et al., 2017a). First, according to the Fornell-Larcker criterion (Fornell & Larcker, 1981), discriminant validity is confirmed if the scores of the square root of the AVE are greater than all correlations between each latent construct and all other latent constructs. Consistent with this recommendation, the results in Table 3 show that the square root of each AVE (shown on the diagonal) was higher than the related inter-construct correlations in the latent construct correlation matrix, suggesting an adequate discriminant validity for all the latent constructs. Second, an assessment of the cross loadings also determines to what extent the measurements of different latent constructs diverge within a measurement model (discriminant validity). Finally, accordingly to the heterotrait-monotrait (HTMT) ratio of correlations approach, an HTMT index should be less than $HTMT_{0.85}$ or $HTMT_{0.90}$ (Henseler, Ringle, & Sarstedt, 2015). In this study, the analysis of HTMT shown in Table 3 (see values above the diagonal) reveals that all latent

constructs satisfactorily met both criteria and were established at $HTMT_{0.85}$, thus confirming that each latent construct of this study measured a unique subject.

Insert Table 3 here

5.2 Structural model

The structural model was validated by assessing the standard criteria of Hair et al. (2017a), including overall goodness-of-fit, collinearity, predictive relevance Q^2, coefficient of determination (R^2 value), and path coefficients (Hair et al., 2017a; Schlägel & Sarstedt, 2016).

5.2.1   Collinearity assessment

Before assessing the path analysis in a structural model, a check to ascertain whether there is any issue of full collinearity among the latent constructs is recommended. Therefore, a full collinearity assessment of each set of predictors in the structural model was conducted, using variance inflation factors (VIFs) as an alternative to identifying multi-collinearity issues. The test results suggested that all VIF values were lower than the common cutoff threshold of 5–10. Therefore, multi-collinearity was not a concern, which gave us confidence that the structural model results were not negatively affected by collinearity.

5.2.2   Coefficient of determination (R^2 value)

The predictive power of the structural model was estimated via the R^2 (variance explained) of all dependent latent constructs. The R^2 value can vary depending upon the research field and area. However, R^2 values of 0.20 are considered relatively high and acceptable in behavioral and social science research (Hair et al., 2017a). The values of R^2 (SMEs absorptive capacity) = 0.59, R^2 (SMEs innovative performance) = 0.39, and R^2 (SMEs overall performance) = 0.37 were in line with prior research,

supporting the conceptual model's in-sample predictive power (Sarstedt, Ringle, Henseler, & Hair, 2014). These results were also supported by estimating predictive validity by means of a blindfolding procedure cross-validation analysis in the following sub-section.

5.2.3 Predictive relevance Q^2

The blindfolding procedure helps to generate values of Q^2, which applies a sample re-use technique that omits part of the data matrix and uses the model estimates to predict the omitted part. For path analysis in the structural models, a value of Q^2 higher than zero in the cross-validated redundancy report indicates predictive relevance. Table 4 shows the Q^2 values of all the dependent latent constructs: Q^2 (SMEs absorptive capacity) = 0.38, Q^2 (SMEs innovative performance) = 0.37, and Q^2 (SMEs overall performance) = 0.34. Since all Q^2 values were considerably above zero, this provided evidence of the conceptual model's predictive relevance in terms of out-of-sample prediction (Hair et al., 2012).

5.2.4 Path coefficients analysis

In accordance with Streukens and Leroi-Werelds (2016), a bootstrapping technique with a re-sampling of 5,000, 163 bootstrap cases, and no sign changes option to generate *t*-scores, standard errors, level of significance, *p*-values, and 95% bias-corrected confidence intervals, was performed. In this way we could estimate the significance and relevance of the path analysis in the structural model relationships through the sign and magnitude of path coefficients. All parameter estimates of direct effects in the conceptual model (see Fig. 1 and Table 4) were positive, strong, statistically significant, and according to the proposed hypotheses. These empirical results provide evidence that international SMEs' vicarious learning from local SMEs was positively related to their ACAP (H1; $\beta = 0.32^{***}$; $p<0.001$) and innovative performance

(H2; $\beta = 0.19^{***}$; $p<0.001$). Therefore, H1 and H2 were accepted. The results also demonstrate that international SMEs' ACAP was positively related to their innovative performance (H3; $\beta = 0.59^{***}$; $p<0.001$) and international overall performance (H4; $\beta = 0.39^{***}$; $p<0.001$); therefore, H3 and H4 were accepted. Finally, the results also supported H5: international SMEs' innovative performance (H5; $\beta = 0.20^{**}$; $p<0.01$) was positively associated with their overall performance.

Insert Table 4 here

5.3 Moderation analysis

When performing moderation analysis using PLS-SEM, several techniques are available to model the moderator's influence on the relationship between two constructs (Hair et al., 2019; Hayes, 2017). This study employed a two-stage approach (Henseler & Fassott, 2010) that clearly outperforms all others in terms of parameter recovery and statistical power (Becker, Ringle, & Sarstedt, 2018). For H6 and H7—which postulated a moderating effect of strength of ties with local SMEs on vicarious learning from local SMEs and international SMEs' ACAP; and the moderating effect of prior success experiences of local SMEs on vicarious learning from local SMEs and international SMEs' ACAP—the moderation analysis was conducted in line with recently established guidelines (Fassott, Henseler, & Coelho, 2016; Hair et al., 2017, 2019).

The results obtained from the SmartPLS 3.2.7 program (see Table 4 and Fig. 2) show that the moderating effect of strength of ties with local SMEs on the relationship between vicarious learning from them and international SMEs' absorptive capacity ($\beta = 0.10^{*}$; $p<0.05$) was significant, supporting H6. We also examined strength of ties with local SMEs at three levels—high, medium, and low—to determine whether the relationship between vicarious learning from local SMEs and international SMEs' absorptive capacity varied at different strengths. In Fig 2,

the green, red, and blue lines represent respectively high, medium, and low strengths of ties with host country SMEs. The upper green line has a flatter slope, while the lower blue line has a steeper slope. As a rule of thumb and an approximation, the slope for the low strength of ties with local SMEs was the simple effect (i.e. 0.32) minus the interaction effect (0.10), while the slope for the high strength of ties with local SMEs was the simple effect (i.e. 0.50) plus the interaction effect (0.10). Hence, the moderation interaction graph (Fig. 2) supports the previously discussed positive interaction term. Higher strengths of ties as shown in Fig 2 produced a stronger relationship between vicarious learning from local SMEs and international SMEs' absorptive capacity, while lower strengths of ties with local SMEs led to a weaker relationship. Thus, the moderating effect of strength of ties with local SMEs on the relationship between vicarious learning from local SMEs and international SMEs' ACAP was generally positive, increasing with increasing strength of ties with host country SMEs.

Applying the same procedures, the findings in Table 4 and Fig.3 were consistent with H7, which suggests that the moderating effect of prior success experiences of local SMEs on the relationship between vicarious learning from them and international SMEs' absorptive capacity ($\beta = 0.17^*$; $p<0.05$) was significant. Thus, the positive effect of vicarious learning on local SMEs' ACAP was moderated by prior success experiences of local SMEs. Here the effect was also stronger when prior success experiences of local SMEs were favorable and weaker when unfavorable (Fig. 3). This suggests that the relationship between vicarious learning from local SMEs and international SMEs' absorptive capacity becomes stronger with higher levels of prior success experiences of local SMEs. For low levels of prior success experiences of local SMEs, the slope was much flatter, as shown in Fig 3.

Insert Figure 2 here

Insert Figure 3 here

5.4 Control variables results

As anticipated, none of the control variables shown any significantly effects on firm's size, annual revenue, ownership and industry types except the effect of industry type on SMEs overall performance. As shown in Table 4, the results of control variables suggested that industry type was positively related to SMEs overall performance ($\beta = 0.14^{*}$, $p < 0.05$) which is consistent with prior research in this area (Yang & Tsai, 2019).

6. Discussion and conclusion

6.1 Discussion of the results

This study examined the influence of international SMEs' vicarious learning from local SMEs on enhancing the former's ACAP to improve their innovation and overall performance. It also examined the moderating role of network characteristics, namely, the strength of ties with local SMEs and prior success experience of local SMEs, in improving international SMEs' vicarious learning and ACAP for adapting to host countries' market conditions. The study concludes that international SMEs' adaptation to a host country's market conditions can be improved by networking with local firms, but that both the strength of the relationship and the selection of networking partners are crucial. International SMEs should develop strong ties with local firms with strong prior success experience to benefit from the latter's knowledge of local business conditions. We also conclude that international SMEs' innovation and overall performance are significantly influenced by their vicarious learning from local firms, with their ACAP improving as a result.

The findings of this study are in line with those of previous studies. For instance, we found a positive association between international SMEs' vicarious learning from local SMEs and their ACAP. Lane and Lubatkin (1998) and Posen and Chen (2013) also hold that ACAP can be improved to absorb new knowledge learned from outside firms in the network. Similarly, we found that international SMEs' vicarious learning from local SMEs is positively related to their innovation. The literature also suggests that firms persistently use vicarious learning to adopt the best practices of successful firms to take advantage of their experience and improve their innovation (Burns & Wholey, 1993; Collins & Porras, 1994; Connell & Cohn, 1995; Haunschild & Miner, 1997; Peters & Waterman, 1982). Sufficient evidence in the literature explains the role of ACAP in improving a firm's innovative capabilities and innovation (Daghfous, 2004; Hughes et al., 2014; Subramaniam & Youndt, 2005; Wu & Shanley, 2009). Studies also suggest that firms can improve their overall performance by exploiting their externally absorbed knowledge to develop innovative products and services (Morgan & Turnell, 2003; Murray & Peyrefitte, 2007). Li and Liu (2015) hold that the cooperation derived by maintaining strong ties with firms in a network can yield greater knowledge gains and prior success experience to improve the outcomes of vicarious learning and imitation by organizations (e.g., Greve, 1998, 2000). This study provides empirical evidence to prove the theoretical arguments and propose a novel conceptual model within which all the hypotheses are supported.

6.2 Theoretical contributions

This study contributes to the theory on inter-firm networking, organizational learning theory, ACAP, SME internationalization, and innovation. It corroborates organizational learning theory by reinforcing the importance of vicarious learning from peers in the host country to

acquire the necessary knowledge to sustain and succeed in the host country market. The study extends the body on knowledge on this topic. The current literature on inter-firm networking supports the role of vicarious learning in improving the ACAP, innovation, and overall performance of firms. Some recent studies such as Jiang et al. (2020) emphasize the importance of the strength of ties with external firms for managing SMEs' tacit knowledge. Su et al. (2020) highlight the importance of examining the enabling factors that create barriers for SMEs to enter transnational markets. Divenney et al. (2019) hold that during internationalization, many SMEs fail to succeed in the global market because of a lack of networking abilities in host country markets and the talent to learn from the success or failure of firms in the network. Similarly, Cliquet et al. (2019) also underline the importance of future research on understanding the new theoretical perspectives of inter-firm networking to improve firms' innovation. This study responds to the research gap identified above and contributes to the body of knowledge by proposing and empirically evidencing the moderating role of the strength of ties and success experience of local SMEs in the transnational market to reap the benefits of vicarious learning from these local firms to improve international SMEs' ACAP, innovation, and overall performance.

6.3 Managerial implications

This research offers numerous implications for managers and practitioners. The study implies that networking with local SMEs in host countries is necessary if foreign SMEs wish to adapt to local market conditions. International SMEs should learn from the past successes of other networked SMEs in host countries to increase the likelihood of their internationalization success. However, both the strength of their ties and the selection of firms in a host country

network are important. International SME managers should thus practice extreme caution when selecting network partners in host countries; in particular, they should strengthen ties with firms that have strong prior success experience to learn from their successful strategies and use this knowledge to improve their own entrepreneurial capabilities and performance. International SME managers should maximize the translation of their vicarious learning into ACAP to improve their organizational learning and thus their innovation and overall performance. They should also establish reciprocal and long-term learning relationships with local firms to develop enduring ties with them. Networking with local firms should be on the basis of the need to adapt to the host country's business conditions: the greater the need to adapt to a host country, the more effort should be made to build strong ties with successful local firms.

6.4 Limitations and future research directions

The findings of this study are based on the characteristics of the sample and contextual factors of the Saudi market. Using both a larger sample from across industrial sectors and a longitudinal dataset would provide more robust results for the conceptual model proposed in this study. Future research should consider additional network characteristics of local SMEs, such as the frequency of interactions between international and local SMEs, as moderating variables. Mediating variables could also be introduced into this conceptual model that might better describe the translation of vicarious learning into ACAP, innovation, and overall performance. A detailed analysis of the two dimensions of ACAP (need-knowledge and solution-knowledge) could yield interesting results in terms of which of the two is more important for transnational SMEs in host countries. Future researchers could also separate SMEs from various industrial sectors in terms of their need to adapt to host countries. We measure the prior success experience

constructs as structured unidimensional and reflective first-order constructs using five-point Likert scales. Future studies might use a better proxy for measuring prior success experience, such as the success rates of product launches by firms.

This study examines the role of vicarious learning in improving ACAP; however, this causation could be examined in reverse by analyzing the role of ACAP in improving vicarious learning. Future studies could also examine the role of ACAP in improving the vicarious learning and innovation of international SMEs or the directional causality between ACAP and vicarious learning. The study examines the moderating role of the prior success experiences of local SMEs in the host country. Forms of experiences include failure vs. success experiences, direct vs. indirect experiences, and the diversity of prior experiences (Yang & Hahn, 2015). A detailed analysis of these forms in future research could yield more interesting results. Similarly, we only examine the strength of ties in the network relationship. The inclusion of relationship quality, relationship length, and relation symmetry could provide more insightful conclusions.

Finally, this study uses cross-sectional data. Scholars argue that timespan is important in a conceptual model. The innovative outcomes of vicarious learning by international SMEs from local SMEs will not happen immediately. International SMEs take time to acquire, assimilate, transform, and exploit the knowledge secured from local SMEs to improve their internal processes and products as well as yield enhanced innovative and overall outcomes. Therefore, we suggest a longitudinal analysis to analyze the innovative outcomes of vicarious learning throughout the lifespan of international SMEs.

References

Aarikka-Stenroos, L., & Rittala P. (2017). Network management in the era of ecosystems: Systematic review and management framework. *Industrial Marketing Management*, 67, 23 – 36.

Agarwal, R., Echambadi, R., Franco, A.M., & Sarkar, M.B. (2004). Knowledge transfer through inheritance: Spin-out generation, development, and survival. Acad. Management J. 47(4):501–522.

Akgun, A.E., Keskin, H., Byrne, J.C., & Aren, S. (2007). Emotional and learning capability and their impact on product innovativeness and firm performance. *Technovation,* 27, 501–513.

Alashwal, A.M., Low, W.W., & Kamis, N.A.M. (2019). Effect of Inter-organizational Learning on Construction SMEs Performance. IOP Conference Series: Materials Science and Engineering, retrieved November 10, 2019 from https://iopscience.iop.org/article/10.1088/1757-899X/495/1/012043/meta

Albort-Morant, G., Henseler, J., Cepeda-Carrión, G., & Leal-Rodríguez, A.L. (2018). Potential and Realized Absorptive Capacity as Complementary Drivers of Green Product and Process Innovation Performance. *Sustainability,* 10, 381; doi:10.3390/su10020381

Alexander, C., (1964). *Notes Toward a Synthesis of Form.* Harvard University Press, Cambridge

Ali, M., & Park, K. (2016). The mediating role of an innovative culture in the relationship between absorptive capacity and technical and non-technical innovation. *Journal of Business Research*, *69*(5), 1669-1675

Ali, M., Seny Kan, A., and Sarstedt, M. (2016). Direct and configurational paths of absorptive capacity and organizational innovation to successful organizational performance. *Journal of Business Research*, 69, 5317-5323.

Ali, M., Ali, I., Al-Maimani, K. A., & Park, K. (2018). The effect of organizational structure on absorptive capacity in single and dual learning modes. *Journal of Innovation & Knowledge*, *3*(3), 108-114.

Ali, I., Musawir, A. U., & Ali, M. (2018). Impact of knowledge sharing and absorptive capacity on project performance: the moderating role of social processes. *Journal of Knowledge Management*, *22*(2), 453-477.

Ali, Z., Sun, H., & Ali, M. (2017). The impact of managerial and adaptive capabilities to stimulate organizational innovation in SMEs: a complementary PLS–SEM approach. *Sustainability*, *9*(12), 2157.

Al Mamun, A., Muhammad, N.M.N, and Ismail, M.B. (2017). Absorptive capacity, innovativeness, and performance of micro-enterprises in Malaysia. *Vision*, 21(3) 243–249.

Apriliyanti, I. D., & Alon, I. (2017). Bibliometric analysis of absorptive capacity. *International Business Review*, *26* (5), 896-907.

Argote, L. (2012). *Organizational Learning: Creating, Retaining and Transferring Knowledge*. New York: Springer.

Argote, L., & Epple, D. (1990). Learning curves in manufacturing. *Science,* 247: 920–924.

Argote, L., and Miron-Spektor, E. (2011). Organizational Learning: From Experience to Knowledge. *Organization Science,* 22 (5), 1123-1137.

Azmi, F. T. (2008). Organizational learning: Crafting a strategic framework. ICFAI *Journal of Business Strategy*, 5(2), 58-70.

Baškarada, S., & Koronios, A. (2018). Strategies for maximizing organizational absorptive capacity. *Industrial and Commercial Training*, *50* (2), 95-100.

Becker, J. M., Klein, K., & Wetzels, M. (2012). Hierarchical latent variable models in PLS-SEM: guidelines for using reflective-formative type models. *Long Range Planning*, *45*(5-6), 359-394.

Becker, J. M., Ringle, C. M., & Sarstedt, M. (2018). Estimating moderating effects in PLS-SEM and PLSc-SEM: interaction term generation* Data treatment. *Journal of Applied Structural Equation Modeling*, *2*(2), 1-21.

Burns, L., & Wholey, D. 1993. Adoption and abandonment of matrix management programs: Effects of organizational characteristics and interorganizational networks. *Academy of Management Journal*, 36: 106–138.

Camisón, C., & Villar-López, A. (2011). Non-technical innovation: Organizational memory and learning capabilities as antecedent factors with effects on sustained competitive advantage. *Industrial Marketing Management*, *40*(8), 1294-1304.

Cepeda-Carrion, G., Cegarra-Navarro, J. G., & Cillo, V. (2019). Tips to use partial least squares structural equation modelling (PLS-SEM) in knowledge management. *Journal of Knowledge Management*, *23*(1), 67-89.

Chin, W. W. (2010). *How to write up and report PLS analyses.* In Handbook of partial least squares (pp. 655-690). Springer, Berlin, Heidelberg.

Cliquet, G., Hendrikse, G., Sreckovic, M., Windsperger, J., and Yaqub, M.Z. (2019). Interfirm Networks and Innovation, call for special issue of *Industrial Market Management,* retrieved January 01, 2019 from https://www.journals.elsevier.com/industrial-marketing-management/calls-for-papers/interfirm-networks-and-innovation

Cohen, W. and Levinthal, D. (1989). Innovation and learning: The two faces of R&D. *Economic Journal*, 99: 569–596.

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

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

Coleman, J., (1990). *Foundations of social theory*. Harvard University Press, Cambridge.

Collins, J. C, & Porras, J. I. (1994). *Built to last: Successful habits of visionary companies.* New York: Harper Business.

Conell, C, & Cohn, S. (1995). Learning from other people's action: Environmental variation and diffusion in French coal mining strikes, 1890-1935. *American Journal of Sociology*, 101: 366-403.

Czepiel, J. A. (1975). Patterns of Interorganizational Communications and the Diffusion of a Major Technological Innovation in a Competitive Industrial Community. *Academy of Management Journal*, 18, 6-24.

Daghfous, A. (2004). Knowledge management as an organizational innovation: an absorptive capacity perspective and a case study. *International Journal of Innovation and Learning,* 1(4), 409-422.

Dencker, J.C., Gruber, M, Shah, S.K. (2009). Pre-entry knowledge, learning, and the survival of new firms. *Organization Science.* 20(3):516–537.

Divenney, T.M., Lee, J.Y., and Jimenes, A. (2019). International networking success vs failure-based learning of SMEs. *Management International Reviews*, retrieved November 01, 2019 from https://www.springer.com›content›document› cda_downloaddocument

Fassott, G., Henseler, J., & Coelho, P. S. (2016). Testing moderating effects in PLS path models with composite variables. *Industrial management & data systems*, *116*(9), 1887-1900.

Flatten, T.C., Greve, G.I., and Brettel, M. (2011). Absorptive Capacity and Firm Performance in SMEs: The Mediating Influence of Strategic Alliances. *European Management Review,* 8, 137–152.

Forkmann, S., Henneberg, S.C., and Mitrega, M. (2018). Capabilities in business relationships and networks: Research recommendations and directions. *Industrial Marketing Management,* 74, 4-26.

Fornell, C., & Larcker, D. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*, 39–50. doi: 10.2307/3151312

Fosfuri, A. and Tribó, J.A. (2008). Exploring the antecedents of potential absorptive capacity and its impact on innovation performance. *Omega*, 36(2), 173-187.

Gao, S., Yeoh, W., Wong, S. F., & Scheepers, R. (2017). A literature analysis of the use of absorptive capacity construct in IS research. *International Journal of Information Management*, *37*(2), 36-42.

Glavas, C., Mathews, S. and Russell-Bennett, R. (2019). Knowledge acquisition via internet-enabled platforms. *International Marketing Review*, 36(1), 74-107.

Gölgeci, I., & Kuivalainen, O. (2020). Does social capital matter for supply chain resilience? The role of absorptive capacity and marketing-supply chain management alignment. *Industrial Marketing Management*, *84*, 63-74.

Gray, C. (2006). Absorptive capacity, knowledge management and innovation in entrepreneurial small firms. *International Journal of Entrepreneurial Behavior & Research*, 12: 345– 360.

Granovetter, M. S. (1973). The Strength of Weak Ties. *American Journal of Sociology,* 78 (6) 1360-1380.

Greve, H. R. (1998). Managerial cognition and the mimetic adoption of market positions: What you see is what you do. *Strategic Management Journal*, 19(10), 967-988.

Greve, H. R. (2000). Market Niche Entry Decisions: Competition, Learning, and Strategy in Tokyo Banking, 1894-1936. *The Academy of Management Journal*, 43(5), 816–836.

Hagedoorn, J. and Frankort, H.T. (2008). The gloomy side of embeddedness: the effects of overembeddedness on inter-firm partnership formation. *Advances in Strategic Management,* 25, 503-530.

Hair, J. F., Sarstedt, M., Ringle, C. M., & Mena, J. A. (2012). An assessment of the use of partial least squares structural equation modeling in marketing research. *Journal of the Academy of Marketing Science, 40*(3), 414–433.

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017a). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. 2nd edition, Thousand Oaks: Sage.

Hair, J. F., Sarstedt, M., Ringle, C. M., & Gudergan, S. P. (2017b). Advanced issues in partial least squares structural equation modeling. SAGE Publications, Incorporated.

Hair, J. F., Sarstedt, M., & Ringle, C. M. (2019). Rethinking some of the rethinking of partial least squares. *European Journal of Marketing,* forthcoming.

Hansen, M. T. (1999). The search-transfer problem: The role of weak ties in sharing knowledge across organization subunits. *Administrative Science Quarterly*. 44 82-1

Haunschild, P. R., & Miner, A. S. (1997). Modes of interorganizational imitation: The effects of salience and uncertainty. *Administrative Science Quarterly*, 42: 472– 500.

Hayes, A. F. (2017). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. Guilford Publications.

Helfat C.E., Lieberman, M.B. (2002). The birth of capabilities: Market entry and the importance of pre–history. *Industrial Corporate Change,* 11(4):725–760.

Henseler, J. (2017). Bridging design and behavioral research with variance-based structural equation modeling. *Journal of advertising*, *46*(1), 178-192.

Henseler, J., & Fassott, G. (2010). Testing moderating effects in PLS path models: An illustration of available procedures. In *Handbook of partial least squares* (pp. 713-735). Springer, Berlin, Heidelberg.

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

Henseler, J., Hubona, G., & Ray, P. A. (2016). Using PLS path modeling in new technology research: updated guidelines. *Industrial management & data systems*, *116*(1), 2-20.

Holcomb, T.R., Ireland, R.D., Holmes Jr, R.M., and Hitt, M.A. (2009). Architecture of Entrepreneurial Learning: Exploring the Link among Heuristics, Knowledge, and Action. *Entrepreneurship Theory and Practice,* 33 (1), 167-192.

Hippel, E.v., (1988). *The Sources on Innovation*. Oxford University Press, Oxford.

Huang, D., Chen, S., Zhang, G. and Ye, J. (2018), Organizational forgetting, absorptive capacity, and innovation performance: A moderated mediation analysis. *Management Decision*, 56(1), 87-104.

Huber, G.P. (1991). Organizational Learning: The Contributing Processes and the Literatures. *Organization Science*, 2(1), 88-115.

Hughes, M., Morgan, R.E., Ireland, R.D., (2014). Social capital and learning advantages: a problem of absorptive capacity. *Strategic Entrepreneurship Journal*, 8(3), 214-233

Hurley, R.F., and Hult, G.T.M., (1998). Innovation, market orientation, and organizational learning: an integration and empirical examination. *Journal of Marketing* 62, 42–54.

Ingram, P., & Holzinger, J. A. C. (1997). Opportunity and constraint: Organizations' learning from the operating and competitive experience of industries. *Strategic Management Journal*, 18: 75–98.

Ingram, P., & Baum, J. A. C. (1997). Opportunity and constraint: Organizations' learning from the operating and competitive experience of industries. *Strategic Management Journal,* 18: 75-98.

Johanson, J., & Vahlne, J.-E. (2006). Commitment and opportunity development in the internationalization process: A note on the Uppsala internationalization process model. *Management International Review*, 46, 165–178.

Johanson, J., & Vahlne, J.-E. (2009). The Uppsala internationalization process model revisited: From liability of foreignness to liability of outsidership. *Journal of International Business Studies*, 40, 1411–1431.

Jiang, Z., Wang, Z., & Feng, C. (2020). Balancing the strength of external and internal tie for tacit knowledge management. *Technology Analysis & Strategic Management,* 1-16.

Kazlauskaite, R., Autio, E., Gelbuda, M., & Sarapovas, T. (2015). The Resource-based View and SME Internationalisation: An Emerging Economy Perspective. *Entrepreneurial Business and Economics Review*, 3(2):53-64

Kim, J.-Y. (2000). Crash test without dummies: A longitudinal study of inter-organizational learning from fail ure experience in the U.S. commercial banking industry, 1984-1998. Unpublished doctoral dissertation, University of Wisconsin-Madison

Kim, J., and Miner, A.S. (2007). Vicarious learning from the failure and near-failure of others: Evidence from the U.S. commercial banking industry. *Academy of Management*, 50 (2), 687-714.

Khachlouf, N., and Quilin, B. (2018). Interfirm ties and knowledge transfer: The moderating role of absorptive capacity of managers. *Knowledge and Process Management,* 25(6), 1-11.

Koch, T., and Windsperger, J. (2017). Seeing through the network: Competitive advantage in the digital economy. *Journal of Organization Design, 6*(1), 6 (doi:10.1186/s41469-017-0016-z).

Kohtamäki, M., Partanen, J., Parida, V., and Wincent, J. (2013). Non-linear relationship between industrial service offering and sales growth: The moderating role of network capabilities. *Industrial Marketing Management,* 42 (8), 1374 - 1385.

Kurt, Y., Yamin, M., Sinkovics, N., & Sinkovics, R. R. (2016). Spirituality as an antecedent of trust and network commitment: The case of Anatolian Tigers. *European Management Journal*, *34*(6), 686-700.

Lane, P. and Lubatkin, M. (1998). Relative absorptive capacity and interorganizational learning. *Strategic Management Journal*, 19: 461–477.

Lane, P., Koka, B., and Pathak, S. (2006). The reification of absorptive capacity: A critical review and rejuvenation of the construct. *Academy of Management Review*, 31: 833–863.

Leal-Rodríguez, A. L., Ariza-Montes, J. A., Roldán, J. L., & Leal-Millán, A. G. (2014). Absorptive capacity, innovation and cultural barriers: A conditional mediation model. *Journal of Business Research, 67*(5), 763-768.

Lechner, C., Dowling, M., & Welpe, I. (2006). Firm networks and firm development: The role of the relational mix. *Journal of Business Venturing*, 21(4), 514–540.

Lee, R. P., & Tang, X. (2018). Does it pay to be innovation and imitation oriented? An examination of the antecedents and consequences of innovation and imitation orientations. *Journal of Product Innovation Management*, *35*(1), 11-26.

Liao, J., Welsch, H. and Stoica, M. (2003). Organizational absorptive capacity and responsiveness: An empirical investigation of growth-oriented SMEs. *Entrepreneurship: Theory & Practice*, 28: 63–85.

Liu, C.-H. (2017). The relationships among intellectual capital, social capital, and performance - The moderating role of business ties and environmental uncertainty, *Tourism Management*, 61, 553-561.

Li, Y.-Q., & Liu, C.-H. (2015). Knowledge Cooperation Diversification Strategy for Tourism Scholar Creativity: The Moderating Role of Tie Strength. *Asia Pacific Journal of Tourism Research,* 21(1), 94–117.

The effect of network relationship on the performance of SMEs. *Journal of Business Research*, 69: 1780-1784.

Liu, X., Shen, M., Ding, W., and Zhao, X. (2017). Tie strength, absorptive capacity and innovation performance in Chinese manufacturing industries. *Nankai Business Review International,* 8(4), 475-494.

Lowik, S., Kraaijenbrink, J., Groen, A.J., (2012). The effects of prior knowledge, networks, and cognitive style on individuals' absorptive capacity. Academy of Management Proceedings.

Madsen, P. M., & Desai, V. (2010). Failing to learn? The effects of failure and success on organizational learning in the global orbital launch vehicle industry. *Academy of Management Journal*, 53(3), 451–476.

Marques, C. S., and Ferreira, J. (2009). SME Innovative Capacity, Competitive Advantage and Performance in a 'Traditional' Industrial Region of Portugal. *Journal of Technology Management & Innovation*, 4 (4), 53-68.

Mayers, C.G. (2015). That others may learn: three views on vicarious learning in organizations. PhD thesis submitted at the University of Michigan, USA.

McFadyen,M.A. and Cannella, A.A. (2004). Social capital and knowledge creation: diminishing returns of the number and strength of exchange relationships. *Academy of Management Journal,* 47(5), 735-746.

McGrath, R. G 1999. Falling forward: Real options reason ing and entrepreneurial failure. Academy of Manage ment Review, 24: 13-30.

Miner, A. S., & Haunschild, P. R. (1995). Population level learning. In L. L. Cummings & B. M. Staw (Eds.), *Research in organizational behavior*, vol. 17: 115–166. Greenwich, CT: JAI Press.

Miner, A. S., Kim, J.-Y., Holzinger, I., & Haunschild, P. R. (1999). *Fruits of failure: Organizational failure and population level learning.* In A. S. Miner & P. Anderson (Eds.), Advances in Strategic Management: Population level learning and industry

Muscio, A. (2007). The Impact of Absorptive Capacity on SMEs' Collaboration. *Economics of Innovation and New Technology,* 16(8):653-668.

Mogollon, R., Vaquero, A. (2004). El comportamiento innovador y los resultados de la empresa: Un análisis empírico. *Proceedings of the XVIII Congreso Anual y XIV Congreso Hispano-Francês*, AEDEM, Ourense, Spain.

Morgan, R. and Turnell, C. (2003). Market-based organizational learning and market performance gains. *British Journal of Management*, 14: 255–274.

Murray, S. and Peyrefitte, J. (2007). Knowledge type and communication media choice in the knowledge transfer process. *Journal of Managerial Issues*, 19: 111–133.

Narver, J. C., & Slater, S. F. (1990). The effect of market orientation on business profitability. *Journal of Marketing*, 54(4), 20–35.

Naude, P., Zaefarian, P., Tavani, Z.N., Neghabi, S., Zaefarian, R. (2014). The influence of network effects on SME performance. *Industrial Marketing Management,* 43, 630–641.

Newbert, S. (2007). Empirical research on the resource-based view of the firm: An assessment and suggestions for future research. *Strategic Management Journal*, *28*, 121-146.

Nunnally, J.C. 1978. *Psychometric theory*. New York: McGraw-Hill.

OECD, (2017). Enhancing the contributions of SMEs in a global and digitalized economy. Meeting of the OECD Council at Ministerial Level, Paris, 7-8 June 2017.

Osano, H. M. (2019). Global expansion of SMEs: role of global market strategy for Kenyan SMEs. *Journal of Innovation and Entrepreneurship*, 8 (1), 1-31.

Patel, V. K., Manley, S. C., Hair Jr, J. F., Ferrell, O. C., & Pieper, T. M. (2016). Is stakeholder orientation relevant for European firms? *European Management Journal*, *34*(6), 650-660.

Pelham, A. M., & Wilson, D. J. (1996). A longitudinal study of the impact of market structure, firm structure, strategy, and market orientation culture on dimensions of performance. *Academy of Marketing Science*, 24(1), 27–43.

Peters, T. J., & Waterman, R. H. (1982). In search of excellence: Lessons from America's best-run companies. New York: Harper & Row.

Porter, M. (1994). *Construir as Vantagens Competitivas de Portugal*. Edição do Fórum para a Competitividade, Portugal.

Posen, H. E., & Chen, J. S. (2013). An advantage of newness: Vicarious learning despite limited absorptive capacity. *Organization Science*, 1-16.

Rajapathirana, R.P.J., and Yui, H. (2018). Relationship between innovation capability, innovation type, and firm performance. *Journal of Innovation & Knowledge.* 3, 44-55.

Richter, N. F., Cepeda, G., Roldán, J. L., & Ringle, C. M. (2015). European management research using partial least squares structural equation modeling (PLS-SEM). *European Management Journal*, *33*(1), 1-3.

Rigdon, E. E. (2016). Choosing PLS path modeling as analytical method in European management research: A realist perspective. *European Management Journal*, *34*(6), 598-605.

Rigdon, E. E., Sarstedt, M., & Ringle, C. M. (2017). On comparing results from CB-SEM and PLS-SEM: Five perspectives and five recommendations. *Marketing ZFP*, *39*(3), 4-16.

Rindfleisch, A., & Moorman, C. 2001. The acquisition and utilization of information in new product alliances: A strength-of-ties perspective. *Journal of Marketing*, 65(2): 1–18.

Ringle, C. M., Wende, S., & Becker, J. M. (2015). SmartPLS 3. *Boenningstedt: SmartPLS GmbH, http://www. smartpls. com*.

Roberts, J. (2000). From know-how to show-how? Questioning the role of information and communication technologies in knowledge transfer. *Technology Analysis & Strategic Management*, 12(4), 429-443.

Roberts, P., Amit, R. (2003). The dynamics of innovative activity and competitive advantage: The case of Australian retail banking, 1981 to 1995. *Organization Science*, 14 (2), 107-122.

Roberts, N., Galluch, P. S., Dinger, M., & Grover, V. (2012). Absorptive capacity and information systems research: Review, synthesis, and directions for future research. *MIS Quarterly*, *36*(2).

Roldan, J. L., & Sánchez-Franco, M. J. (2012). Variance-based structural equation modeling: guidelines for using partial least squares. *Research methodologies, innovations and philosophies in software systems engineering and information systems*, *193*.

Ronkko, M., & Evermann, J. (2013). A critical examination of common beliefs about partial least squares path modeling. *Organizational Research Methods*, *16*(3), 425-448.

Ronkko, M., McIntosh, C. N., & Antonakis, J. (2015). On the adoption of partial least squares in psychological research: Caveat emptor. *Personality and Individual Differences*, *87*, 76-84.

Ronkko, M., McIntosh, C. N., Antonakis, J., & Edwards, J. R. (2016). Partial least squares path modeling: Time for some serious second thoughts. *Journal of Operations Management*, *47*, 9-27.

Rost, K. (2011). The strength of strong ties in the creation of innovation. *Research Policy*, 40(4):588-604.

Rowley, K., Daniel, M., Skinner, K., Skinner, M., White, G., & O'Dea, K. (2000). Effectiveness of a community-directed 'healthy lifestyle' program in a remote Australian aboriginal community. *Australian and New Zealand Journal of Public Health,* 24(2), 136-144

Sahal, D. (1982). *The Transfer and Utilization of Technical Knowledge*. Lexington, MA: Lexington Books.

Sarasvathy, S. D. (2001). Causation and effectuation: Toward a theoretical shift from economic inevitability to entrepreneurial contingency. *The Academy of Management Review, 26*(2), 243-263.

Sarstedt, M., Hair, J. F., Ringle, C. M., Thiele, K. O., & Gudergan, S. P. (2016). Estimation issues with PLS and CBSEM: Where the bias lies! *Journal of Business Research, 69*, 3998-4010.

Sarstedt, M., Hair Jr, J. F., Cheah, J. H., Becker, J. M., & Ringle, C. M. (2019). How to specify, estimate, and validate higher-order constructs in PLS-SEM. *Australasian Marketing Journal*. *forthcoming*

Sarstedt, M., Ringle, C. M., Smith, D., Reams, R., & Hair Jr, J. F. (2014). Partial least squares structural equation modeling (PLS-SEM): A useful tool for family business researchers. *Journal of Family Business Strategy*, *5*(1), 105-115.

Schlägel, C., & Sarstedt, M. (2016). Assessing the measurement invariance of the four-dimensional cultural intelligence scale across countries: A composite model approach. *European Management Journal*, *34*(6), 633-649.

Schweisfurth, T.G., & Raasch, C. (2018). Absorptive capacity for need knowledge: Antecedents and effects for employee innovativeness. *Research Policy*, 47: 687-699.

Seidle, R. (2013). The Implications of Organizational Learning Types for Technological Innovation. PhD Thesis submitted to Desautels Faculty of Management McGill University, Montreal, Canada.

Senge, P. (1990). The fifth discipline: The art and practice of the learning organization. New York, NY: Doubleday/Currency.

Short, J.C., Ketchen, D.J., Palmer, T.B., Hult, G.T. (2007). Firm, strategic group, and industry influences on performance. *Strategic Management Journal*, *28*, 147-167.

Sitkin, S. (1992). Learning through failure: The strategy of small losses. In B. M. Staw & L. L. Cunimings (Eds.), Research in organizational behavior, vol. 14: 231 266. Greenwich, CT: JAI Press.

Song, Y., Gnyawali, D. R., Srivastava, M. K., & Asgari, E. (2018). In search of precision in absorptive capacity research: A synthesis of the literature and consolidation of findings. *Journal of Management*, *44*(6), 2343-2374.

Stanko, M. A., Bonner, J. M. and Calantone, R. J. (2007). Building commitment in buyer-seller relationships: A tie strength perspective. *Industrial Marketing Management*, 36 (8), 1094-1103.

Streukens, S., & Leroi-Werelds, S. (2016). Bootstrapping and PLS-SEM: A step-by-step guide to get more out of your bootstrap results. *European Management Journal*, *34*(6), 618-632.

Suarez-Ortega, S.M., García-Cabrera, A.M., & Knight, G.A. (2015). Knowledge acquisition for SMEs first entering developing economies: Evidence from Senegal. *European Journal of Management and Business Economics*, 25(1), 22-35.

Su, F., Khan, Z., Lew, Y.K., Park, B.I. and Choksy, U.S. (2020) Internationalization of Chinese SMEs: The Role of Networks and Global Value Chains. *Business Research Quarterly*. (In press)

Subramaniam, M. and Youndt, M.A. (2005). The influence of intellectual capital on the types of innovative capabilities. *Academy of Management Journal*, 48(3), 450-463.

Sullivan, J. J., and Nonaka, I. (1986). The application of organizational learning theory to Japanese and American Management. *Journal of International Business Studies*, 17 (3), 127-147.

Szarka, J. (1990). Networking and small firms. *Journal of International Small Business,* 8 (2), 10-22.

Teece, D., Pisano, G. (1994). The dynamic capabilities of firms: An introduction. *Industrial and Corporate Change*, 3 (3), 537-556.

Tidd, J., Bessant, J., Pavitt, K. (2001). *Managing Innovation: Integrating Technological, Market and Organizational Change*. 2nd Ed. Chichester: Wiley.

Todorova, G., & Durisin, B. (2007). Absorptive capacity: Valuing a reconceptualization. *Academy of Management Review*, *32*(3), 774-786.

Tolstoy, D. and Agndal, H. (2010). Network resource combinations in international venturing of small biotech firms. *Technovation*, 30(1), 24-36.

van Riel, A. C., van Riel, A. C., Henseler, J., Henseler, J., Kemény, I., Kemény, I., ... & Sasovova, Z. (2017). Estimating hierarchical constructs using consistent partial least squares: The case of second-order composites of common factors. *Industrial Management & Data Systems*, *117*(3), 459-477.

Uzzi, B. (1997). Social structure and competition in interfirm networks: the paradox of embeddedness. *Administrative Science Quarterly*, 42(1), 35-67.

Wright, R. T., Campbell, D. E., Thatcher, J. B., & Roberts, N. H. (2012). Operationalizing Multidimensional Constructs in Structural Equation Modeling: Recommendations for IS Research. *CAIS, 30*, 23.

Wu, J. and Shanley, M.T. (2009). Knowledge stock, exploration, and innovation: research on the united states electromedical device industry. *Journal of Business Research*, 62(4), 474-483.

Yang, L., & Hahn, J. (2015). Learning from Prior Experience: An Empirical Study of Serial Entrepreneurs in IT-enabled Crowdfunding. *Thirty Sixth International Conference on Information Systems, Fort Worth.*

Yang, S. Y., & Tsai, K. H. (2019). Lifting the veil on the link between absorptive capacity and innovation: The roles of cross-functional integration and customer orientation. *Industrial Marketing Management*, *82*, 117-130.

Zahra, S. A., and George, G. (2002). Absorptive capacity: A review, re-conceptualization, and extension. *Academy of Management Review*, *27(2)*, 185-203.

Zahra, S., Ucbasaran, D.and Newey, L. (2009). Social knowledge and SMEs' innovative gains from internationalization. *European Management Review*, 6: 81–93.

Zou, T., Ertug, G., & George, G. (2018). The capacity to innovate: a meta-analysis of absorptive capacity, *Innovation, Organization and Management*, 20(2), 87-121.

Table 1: Demographic profile of the respondent firms

Characteristics	Classifications	Frequency (n = 163)	Parent (%)
Gender	Male	139	85.28
	Female	24	14.72
Age	29 or less	68	41.72
	30-39	51	31.29
	40-49	26	15.95
	50 or older	18	11.04
Position	Dept. manager	60	36.81
	Division manager	68	41.72
	Top mgmt. level	35	21.47
Ownership type	Private enterprise	104	63.80
	Foreign capital firm	24	14.72
	Public enterprise	22	13.50
	Joint company	13	7.98

Industry type	Manufacturing activities	54	33.13
	Service business	27	16.56
	Financial and insurance activities	28	17.18
	Information and communication	20	12.27
	Construction activities	18	11.04
	Distribution/logistics activities	16	9.82
Firm size/employees	Less than 50	18	11.04
	50 - 99	36	22.09
	100 - 149	48	29.45
	150 - 199	43	26.38
	above 200	18	11.04
Annual revenue	Below USD 99 million	175	107.36
	USD 100 - 999 million	59	36.20
	USD 1,000 - 9,000 million	29	17.79
	Above USD 10,000 million	6	3.68

Table 2: Measurement model results

Constructs	Code	SL	SE	t-value [a, b]	VIF	α	C.R	ρ_A [c]	AVE [d]
First-order reflective measurement model									
International SMEs vicarious learning						0.81	0.83	0.71	0.66
	VL1	0.84	0.03	33.14	1.12				
	VL2	0.79	0.04	20.05	1.12				
International SMEs absorptive capacity					1.37	0.71	0.79	0.70	0.76
ACAP need knowledge	ACAP1	0.84	0.03	28.46	0.84	0.72	0.81	0.72	0.50
	ACNK1	0.51	0.07	7.73	1.19				
	ACNK2	0.62	0.05	11.46	1.18				
	ACNK3	0.72	0.04	20.02	1.49				

		SL	SE	t-value	d	α	C.R	ρ	AVE
	ACNK4	0.63	0.06	10.76	1.37				
	ACNK5	0.63	0.06	11.02	1.41				
	ACNK6	0.72	0.04	17.74	1.54				
ACAP solution knowledge						0.76	0.87	0.70	0.83
	ACAP2	0.90	0.01	92.66	1.37				
	ACSK1	0.52	0.09	5.57	1.23				
	ACSK2	0.67	0.06	11.28	1.32				
	ACSK3	0.63	0.08	8.22	1.24				
	ACSK4	0.66	0.06	12.13	1.31				
	ACSK5	0.72	0.04	18.53	1.28				
	ACSK6	0.50	0.09	5.57	1.13				
International SMEs innovative performance						0.70	0.81	0.75	0.74
	INN1	0.69	0.05	14.41	1.53				
	INN2	0.78	0.04	20.17	1.66				
	INN3	0.79	0.02	32.49	1.56				
	INN4	0.70	0.04	15.99	1.32				
	INN5	0.50	0.10	5.00	1.06				
International SMEs overall performance						0.78	0.89	0.70	0.56
	PER1	0.74	0.08	9.69	1.41				
	PER2	0.68	0.07	10.12	1.32				
	PER3	0.81	0.03	24.81	1.14				
Strength of ties with local SMEs						0.89	0.92	0.90	0.76
	STRENGTH1	0.90	0.02	55.00	3.25				
	STRENGTH2	0.90	0.02	53.82	3.34				
	STRENGTH3	0.83	0.04	21.53	2.04				
	STRENGTH4	0.84	0.03	30.66	2.12				
Prior success experiences of local SMEs						0.75	0.85	0.70	0.74
	PRIOREXP1	0.90	0.01	63.06	1.30				
	PRIOREXP2	0.82	0.03	27.36	1.30				

Second-order formative measurement model	**VIF**	**CW**	**SE**	***t*-value [a, b]**
ACAP need knowledge	1.37	0.58	0.02	24.84
ACAP solution knowledge	1.38	0.64	0.03	20.25

Note: SL = Standard loadings; SE = Standard error; [a] Test-statistics are obtained by 500 Bootstrap runs; [b] Absolute *t*-values > 1.96 are two-tailed significant at 5 percent; α = Cronbach's Alpha; C.R = Composite reliability; [c] Dijstra-Henseler's rho; AVE = Average variance extracted; [d] Percentage of variance of item explained by the latent variable; VIF = Variance inflation factor; CW = Correlational weights of first-order composite on second-order composite.

Table 3: Mean, standard deviations, correlations and discriminant validity results.

Constructs	Mean	SD	VIF	1	2	3	4	5	6	7	8	9	10
1. International SMEs vicarious learning	4.00	0.61	1.62	*0.81*	0.57	0.39	0.54	0.44	1.07	0.08	0.09	0.04	0.07
2. International SMEs ACAP	3.69	0.50	1.79	-.50**	*0.87*	0.79	0.65	0.62	0.92	0.09	0.04	0.03	0.02
3. International SMEs innovative performance	3.46	0.75	1.92	-.39**	.62**	*0.86*	0.37	0.17	0.49	0.06	0.03	0.03	0.07
4. International SMEs overall performance	3.78	0.67	1.48	-.54**	.56**	.37**	*0.75*	0.49	0.64	0.03	0.08	0.09	0.08
5. International Strength of ties with local SMEs	4.02	0.87	1.57	-.44**	.55**	.17**	.49**	*0.87*	0.56	0.10	0.05	0.00	0.01
6. Prior success experiences of local SMEs	3.88	0.72	1.64	-.83**	.65**	.39**	.50**	.44**	*0.86*	0.10	0.12	0.03	0.08
7. Ownership type	1.22	0.53	1.00	0.08	-0.08	-0.06	-0.03	-0.10	-0.08	*1.00**	0.14	0.19	0.14
8. Industry type	3.55	1.78	1.00	0.09	-0.03	0.03	.08	-0.05	-0.10	0.14*	*1.00**	0.03	0.19
9. Firm size	3.37	0.81	1.00	-0.04	-0.02	-0.03	0.09	0.00	0.02	0.19**	0.03	*1.00**	0.70
10. Revenue	3.83	2.70	1.00	-0.07	-0.01	-0.07	0.08	0.01	0.06	0.14*	-0.19**	0.70**	*1.00**

Note: SD = Standard deviation; VIF = Variance inflation factor; Diagonal and italicized elements are the square roots of the AVE (average variance extracted); Below the diagonal elements are the correlations between the construct's values; Above the diagonal elements are the HTMT values. *Categorical and single item variable's AVE = 1.

Table 4: Significant testing results of the structural model path coefficients.

Structural Path	Standardized Path coefficient	p-value	Significant difference ($p < 0.05$)?	95% Confidence interval	95% BCa Confidence interval	Conclusion
Non-hypothesized (control variables)						
Ownership type → International SMEs ACAP	-0.02[ns]	0.31	No	[-0.08, 0.05]	[-0.09, 0.04]	
Ownership type → International SMEs innovative performance	0.00[ns]	0.47	No	[-0.10, 0.09]	[-0.10, 0.09]	
Ownership type → International SMEs overall performance	-0.01[ns]	0.43	No	[-0.09, 0.08]	[-0.10, 0.08]	
Industry type → International SMEs ACAP	0.02[ns]	0.38	No	[-0.07, 0.10]	[-0.07, 0.10]	
Industry type → International SMEs innovative performance	0.03[ns]	0.27	No	[-0.06, 0.12]	[-0.06, 0.12]	
Industry type → International SMEs overall performance	0.14[*]	0.01	Yes	[0.04, 0.23]	[0.05, 0.23]	
Firm size → International SMEs ACAP	-0.01[ns]	0.45	No	[-0.11, 0.10]	[-0.11, 0.10]	
Firm size → International SMEs innovative performance	0.04[ns]	0.25	No	[-0.06, 0.15]	[-0.06, 0.15]	
Firm size → International SMEs overall performance	0.04[ns]	0.32	No	[-0.09, 0.17]	[-0.09, 0.17]	
Revenue → International SMEs ACAP	-0.04[ns]	0.31	No	[-0.16, 0.08]	[-0.16, 0.08]	
Revenue → International SMEs innovative performance	-0.10[ns]	0.07	No	[-0.20, 0.02]	[-0.21, 0.01]	
Revenue → International SMEs overall performance	0.06[ns]	0.20	No	[-0.06, 0.18]	[-0.06, 0.18]	
Direct effects						
H1: International SMEs vicarious learning → International SMEs ACAP	0.32[***]	0.000	Yes	[0.23, 0.40]	[0.19, 0.46]	Accepted
H2: International SMEs vicarious learning → International SMEs innovative performance	0.19[***]	0.000	Yes	[0.09, 0.29	[0.04, 0.34]	Accepted
H3: SMEs ACAP → International SMEs innovative performance	0.59[***]	0.000	Yes	[0.49, 0.68]	[0.44, 0.73]	Accepted
H4: SMEs ACAP → International SMEs overall performance	0.39[***]	0.000	Yes	[0.28, 0.49]	[0.23, 0.54]	Accepted
H5: SMEs innovative performance → International SMEs overall performance	0.20[**]	0.090	Yes	[0.09, 0.31]	[0.04, 0.36]	Accepted

Moderating effects						
H6: International SMEs vicarious learning *Strength of ties with local SMEs → SMEs ACAP	0.10*	0.023	Yes	[0.01, 0.17]	[0.04, 0.22]	Accepted
H7: International SMEs vicarious learning* Prior success experiences of local SMEs → SMEs ACAP	0.17*	0.001	Yes	[0.08, 0.26]	[0.03, 0.31]	Accepted

R^2 (International SMEs ACAP) = 0.59;
R^2 (International SMEs innovative performance) = 0.39;
R^2 (International SMEs overall performance) = 0.41;

Q^2 (International SMEs ACAP) = 0.33
Q^2 (International SMEs innovative performance) = 0.37
Q^2 (International SMEs overall performance) = 0.36

Note: ns = non-significant; $_t$ (0.05, 4999) = 1.645; t (0.01, 4999) = 2.327; t (0.001, 4999) = 3.092.
* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$, based on t (4999), one-tailed test.
BCa = Bias corrected confidence interval. Bootstrapping based on n = 5000 subsamples

Appendix A: Questionnaire items used

Vicarious learning from local SMEs (Myers, 2015)

Please assess the degree to which you agree with the following statements about your learning relationship with host country SMEs in your network:

1. The local SMEs in our network often shares their prior experiences, expertise, or knowledge with us to help our learning.
2. We are able to draw meaningful lessons from the experiences and information that local SMEs in our network shares with us.

International SMEs ACAP (Schweisfurth & Raasch, 2018)

ACAP need knowledge

How would you describe your need knowledge absorptive capacity when interacting with local SMEs in your network?

1. We always search for new application problems and needs to create new products.
2. We identify new application problems and needs that are most valuable to us.
3. We translate new application problems and needs into a language that our employees can understand.
4. We turn existing application problems and needs into new ideas.
5. We exploit new application problems and needs to create new products.
6. We always consider how to apply new application problems and needs to improve our products.

ACAP solution knowledge

How would you describe your solution knowledge absorptive capacity when interacting with international SMEs in your network?

1. We always search for new technological solutions to create new products.
2. We identify new technological solutions that are most valuable to us.
3. We translate new technological solutions into a language that our employees can understand.
4. We turn existing technological solutions into new ideas.
5. We exploit new technological solutions to create new products.
6. We always consider how to apply new technological solutions to improve our products.

International SMEs innovative performance (Hurley & Hult, 1998)

1. In our company, technical innovation, based on research results, is readily accepted.
2. In our company, management actively seeks innovative ideas.
3. In our company, innovation is readily accepted in program/project management.
4. In our company, people are rewarded for new ideas that work well.
5. In our company, innovation is perceived as constructive and is actively accepted.

International SMEs overall performance (Akgun et al., 2007)

1. In comparison with your major competitors over the past 3 years, our company has more market share.
2. In comparison with your major competitors over the past 3 years, our company has more growth rate.
3. In comparison with your major competitors over the past 3 years, our company has more profitability.

Strengths of ties with local SMEs (Liu et al., 2017)

1. How would you describe the strength of ties with local SMEs in your network?

Prior success versus failure experiences of local SMEs (Madsen & Desai, 2010)

1. How would you describe the number of prior successful launches made by local SMEs in your network?
2. How would you describe the prior direct experiences towards successful products/projects launching by local SMEs in your network?
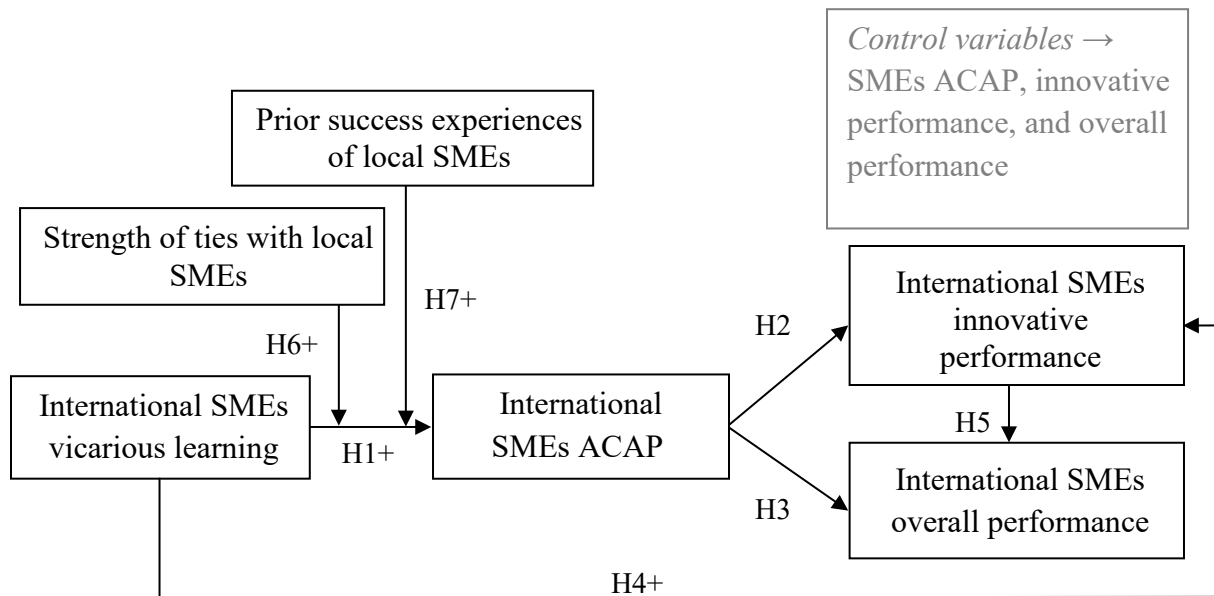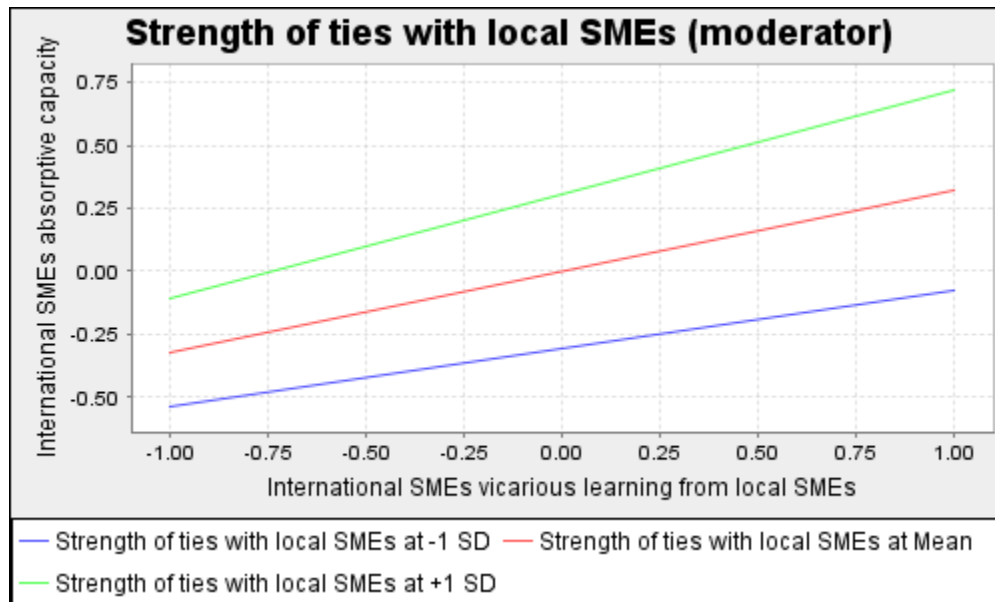
Fig. 1. Conceptual model

Fig. 2. The moderating effect of strength of ties with host country SMEs on vicarious learning from SMEs - SMEs absorptive capacity link (see online version for colors).
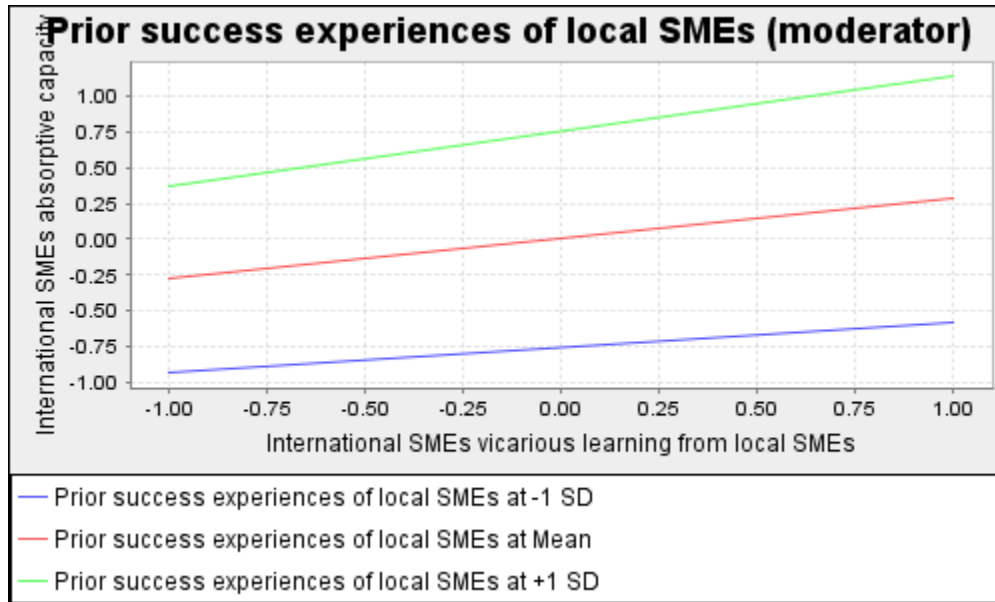
Fig. 3. The moderating effect of prior success experiences of local SMEs on vicarious learning from SMEs - SMEs absorptive capacity link (see online version for colors).