



SME international business models: The role of context and experience



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ABSTRACT

This paper addresses two questions through a study of 180 SMEs located in contrasting industry and home country contexts. First, which business models for international markets prevail among SMEs and do they configure into different types? Second, which factors predict the international business models that SMEs follow? Three distinct international business models (*traditional market-adaptive*, *technology-exploiter*, and *ambidextrous explorer*) are found among the SMEs studied. The likelihood of SMEs adopting one business model rather than another is to a high degree predictable with reference to a small set of factors: industry, level of home economy development, and decision-maker international experience.

1. Introduction

As several reviews of research have indicated, the characteristics of entrepreneurs, firm attributes, and contextual factors are predictors of SME internationalization outcomes (e.g. Jones, Coviello, & Tang, 2011; Kiss, Danis, & Cavusgil, 2012; Terjesen, Hessels, & Li, 2016). However, positioned theoretically between predictors and outcomes are the actions and policies adopted by SMEs in order to secure value in foreign markets – their business models. The term ‘business model’ denotes how a firm configures its activities in order to create value. It can be distinguished from the complementary concepts of a firm’s strategy and revenue model. A strategy concerns a firm’s positioning in relation to external conditions such as market competition, whereas a business model structures a firm’s value-creating capabilities and value-capturing transactions (Yip, 2004; Zott & Amit, 2008), and enables a strategy to be executed (Richardson, 2008). Moreover, a business model refers primarily to value creation, while a revenue model refers to modes of revenue appropriation such as prices and fees charged (Amit & Zott, 2001).

The business models that SMEs adopt for foreign markets (their

international business models) are not necessarily the same as those applied to their domestic markets. Since supplying foreign markets requires decision-makers to consider how to do business across national borders, such as which export channels to use, different competitive and institutional conditions may require an adaptation of business models developed for domestic markets to suit foreign market contexts (Onetti, Zucchella, Jones, & McDougall-Covin, 2012). For example, Landau, Karna and Sailer (2016) concluded from their study of a German firm internationalizing to India that firms have to innovate and adapt their business models to better fit the specific context of their international markets.

Despite the growing incidence of SMEs’ internationalization, we do not yet have a good understanding of the international business models they follow. Nor has there been much theorizing or evidence on the factors which account for them. These two issues inform the research questions that this paper aims to address. First, which international business models prevail among SMEs and do their components configure into different types? Second, which factors predict the business models that SMEs follow? The paper empirically identifies distinct international business models and their key predictors. Two contextual

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factors – industry and home country economic development – emerge as significant business model predictors, with the first having a strong and consistent effect. Firm and entrepreneur international experience also play a predictive role, especially the latter.

These findings emerge from a study of 180 SMEs located in contrasting industry and home country contexts. Its research design incorporates a comparative scope that is unusual in this field of research. The study focuses on SMEs' models for their *international* business. A rationale for this focus is that supplying foreign markets is likely to take SMEs into more competitive and less familiar environments than prevail in their domestic market, and this renders the selection of an appropriate business model particularly critical. Internationalization requires a distinct set of core competitive strengths involving both specific resources and familiarity with foreign market and institutional conditions.

This paper offers several contributions. It identifies a new typology of SME international business models and confirms the utility of applying a combination of resource-based and transactional approaches to the conceptualization of international business models. It develops an explanation for variation in those models informed by resource-based, institutional and cognitive perspectives. The paper draws attention to industry as an important factor in discriminating among SME business models, one that deserves to be given much greater attention as a key contextual attribute in future research. It also indicates the relevance of level of home country economic development for the business models adopted. Finally, it contributes to the emergent literature on the microfoundations of business model design, by demonstrating that the international experience of SME decision-makers discriminates between different international business models.

We begin with a discussion of the business model concept, its theoretical merits, and our interpretation of it. We then identify potential predictors of variation in SME international business models, giving extensive attention to industry in view of its relative neglect in the literature. After describing the methodology of the empirical investigation, we present its results in two stages that correspond to our two research questions. The theoretical and practical interpretation of the findings is discussed in the last part of the paper.

2. Literature and hypotheses

2.1. The business model concept

The concept of 'business model' has come to be widely used by academics and practitioners, and many definitions have been proposed over the last decade (see reviews by Clauss, 2017; DaSilva & Trkman, 2014; Demil, Lecocq, Ricart, & Zott, 2015; Klang, Walln & fer & Hacklin, 2014; Zott, Amit, & Massa, 2011). The term is commonly used to identify how firms do business in order to create value (Demil et al., 2015). Clauss (2017) argues that business models are configurations which integrate particular business dimensions. Likewise, DaSilva and Trkman (2014, p.383) suggest that 'business models represent a specific combination of resources which through transactions generate value for both customers and the organization'. Internationalization, particularly through exporting and licensing, involves foreign transactions through which SMEs can generate value from their combination of resources.

Most discussions of business models refer to the foundations of value-creation embodied in a firm's distinctive technical, managerial and social capital, as well as to the process whereby value is realized through market transactions (Klang, Walln & fer, & Hacklin, 2014). This is similar to the two dimensions proposed by Teece (2010), namely value proposition (market, customer and channel) and value creation (innovation, core competency and network). According to Clauss (2017), value proposition includes new offerings, new channels (e.g., export channels), new markets, and new customer relationships, while the value creating sub components are new capabilities, technology and processes (innovation, core competency) and new partnerships

(network). Zott and Amit (2010) argue that the essence of a business model design lies in its 'activity system' which is a set of interdependent organizational activities through which human, physical and/or capital resources are brought together to fulfil the firm's objective. The effectiveness of its activity system reflects the firm's capability of deploying and integrating resources so as to deliver a profitable product or service. Zott and Amit adopt a more focused view of the business model than, for example, Osterwalder's (2004) broad nine-part business model 'canvas' which includes revenue streams such as prices and fees. Although the business model and revenue stream concepts are closely related, we concur with Zott and Amit that the two are conceptually distinct. Moreover, since many SMEs are focused on specific niche markets it is likely that they will not employ a wide range of revenue streams.

In terms of contributing theories, DaSilva and Trkman (2014) argue that the business model concept draws primarily from the resource-based view of the firm and from the transaction cost perspective, because it sees value being gained from transactions that a firm makes with the use of its resources. Competitive advantage in foreign markets derives from the dynamic combination of several resource and transactional capabilities (López-Rodríguez & García-Rodríguez, 2005); these have been described as 'internationalization capabilities' (Raymond, St-Pierre, Uwizeyemungu, & Le Dinh, 2014). They may include technological innovation in products and services (Baden-Fuller & Haefliger, 2013) through the exploration and exploitation of knowledge (March, 1991), and/or market-oriented competences such as customization and speed of delivery (Drucker, 1994; McQuillan, Scott, & Mangematin, 2016). When broadened beyond a focus on transaction costs, the transactional perspective also recognizes the contribution to value that can be achieved through external network links (Morris, Schindehutte, & Allen, 2005), including transactions of information through such links (Boisot, 1995). A firm's capability to implement its business model therefore denotes to its ability to effectively harness both relevant resources and transactional links (Zaheer & Bell, 2005). It refers particularly to the firm's ability to constructively combine the constituent components of its business model (cf. Amit & Schoemaker, 1993).

2.2. Configurations of international business model

Regarded as an activity system, the business model is a configurational representation of the firm, its policies and activities (Clauss, 2017; Demil et al., 2015), in which the contribution of its constituent elements has increasingly gained recognition (Wirtz, Pistoia, Ullrich, & G & ttel, 2016). The business model concept assumes that the connections between components such as innovation, core competitive competences, and network links are informed by a firm's competitive strategy (Onetti et al., 2012). Within the international entrepreneurship [IE] literature, offering innovative products or services and capitalizing on supporting network links have been prescriptions for international new ventures to overcome the liability of foreignness and achieve early internationalization (Coviello, 2006; Knight & Cavusgil, 2004). SMEs may seek to derive competitive advantage by commercializing their new products or services in multiple country markets, thus increasing the expected returns to their innovation (D'Angelo, Majocchi, Zucchella, & Buck, 2013).

Resource-based and transactional perspectives both have implications for the contribution that networks make to SMEs' international business (Johanson & Vahlne, 2009). External network partners can provide resources that assist an SME's internationalization, while the links to such partners serve as transactional channels through which such support is provided (Hoang & Antoncic, 2003). These network links can offer an SME specific or multiple benefits such as information on foreign market opportunities and constraints, as well as supporting entry into, and success in, foreign markets (Oviatt & McDougall, 1994; Tolstoy, 2014). For example, Nordman and Tolstoy (2016) found that

Swedish SMEs use collaborative partnerships as a catalyst to exploit extended knowledge and resource bases for developing new technological solutions and aligning their business models with foreign-market requirements. Some SMEs license in technology in order to complement in-house new product or service development and shorten the lead time to market (Spithoven, Vanhaverbeke, & Roijakkers, 2013). Moreover, network links have been found to offer SMEs reputational support (Stuart, Hoang, & Hybels, 1999). SME decision-makers may form links with reputable individuals and organizations to enhance their legitimacy – often among potential customers, MNCs and investors – which could lead to exchanges that would have not been possible otherwise (Deeds, Mang, & Frandsen, 1997; Hoang & Antoncic, 2003). SMEs therefore have the potential to include in their business models the leveraging of network links for accessing information and other resources to facilitate their internationalization (Ellis, 2011; Musteen et al., 2014; Sharma & Blomstermo, 2003).

Informed by these considerations and mindful of the case for parsimony, we shall follow DaSilva and Trkman (2014) and focus on (1) resources and the capability to apply them, and (2) transactional characteristics, as key facets of SME international business models. Resources and capabilities are taken to include innovation, flexibility, customization, speed and reliability of delivery and supply chain management. These factors are widely recognized as potential sources of competitive advantage (Love & Roper, 2015) and they were also mentioned by a substantial number of the firms studied. Transactional characteristics refer both to transactional channels to foreign markets and the key external network links utilized by firms to assist their internationalization. The business model components just identified for inclusion in our study are consistent with Zott and Amit's (2010) notion of the business model as an activity system – the activities to generate value. We take account only indirectly of other business model components such as some identified in Osterwalder's 'canvas'. Thus product and service content is addressed with reference to innovation and competitive strengths such as customization. Customer management is explored in terms of the assistance that customers were perceived to give to the firm's internationalization, including feedback on products and market information. In the light of responses in our interviews, it was deemed appropriate to subsume outsourcing under the category of supply chain management.

These operational activities define the way a company does business across borders and are the subject of important business model decisions (Onetti et al., 2012). Since SME international business models are multi-faceted, it can be hypothesized that they will empirically exhibit different configurations. They comprise different ways of operating and generating value because of heterogeneity in resource endowments. This is consistent with Baden-Fuller and Morgan's (2010) view that the concept of business model suggests the possibility of identifying generic forms of firm behavior that are distinctly different. Hence:

H1. Different international business model configurations are evident among SMEs.

2.3. Predictors of variation in SME international business models

This section reviews three potential predictors of variation in SME international business models and the reasons for their selection. Two predictors are contextual - the industry to which the SME belongs and the level of its home economy development. The third predictor is the international experience of key decision-maker(s). While this last predictor has often been taken into account in studies of SME internationalization, the influence of a firm's context has received less attention (Ahokangas & Myllykoski, 2014; Zahra, Wright, & Abdelgawad, 2014).

The predictors combine individually-informed IE and strategically-informed international business levels of analysis insofar as in SMEs it is typically an individual or small number of decision-makers who

actually determine whether contextual factors are relevant for the choice of business models. From a rational positioning perspective, decision-maker 'choices regarding the components and linkages in a business model generate an optimal design for value creation or capture within a given context' (Martins, Rindova, & Greenbaum, 2015, p. 101). The choice of business model design is seen as the outcome of the deductive application of economic logic to the observation of the environment, with decision-makers searching for a business model that best fits that environment (Gavetti & Rivkin, 2007). A cognitive view similarly argues that business model design reflects managers' sense making of the environment in relation to their value-creation logics and modelling (Baden-Fuller & Morgan, 2010).

The selection of the three predictors is principally informed by resource-based, institutional and cognitive perspectives. A resource-based view draws attention to the relevance of (1) industry in terms of the distinctive knowledge, technological and competitive conditions it brings to firms, (2) level of economic development in terms of the resource quality of different countries, and (3) previous international experience in terms of decision-makers' knowledge of and links to foreign markets. Institutional theory draws attention to the distinctive regulatory, normative and cognitive characteristics of different industries as well as to those of developed versus developing economies. A cognitive perspective draws attention to the potential role of decision-makers' international experience in providing them with knowledge that shapes their thinking about an appropriate business model. The following sections elaborate the theoretical rationales for selecting these predictors.

2.3.1. Industry

There have been several attempts to classify business models within the scope of individual industries, especially those that are relatively new and rapidly growing like biotechnology (Sabatier, Mangematin, & Rousselle, 2010) and those in which technological change has had a disruptive impact (Lambert & Davidson, 2013). Nevertheless, the possibility of systematic variation in SME business models between different industries has been little researched (Andersson, Evers, & Kuivalainen, 2014; Child & Hsieh, 2014). The relevance for internationalization of the distinction between manufacturing and service industries has been debated (e.g. Buckley, Pass, & Prescott, 1992) and firms in the service sector have been found to exhibit different patterns of internationalization to those in manufacturing (Erramilli & Rao, 1993; Javalgi & Martin, 2007). However, these sector categories are extremely broad and there is a need to investigate finer distinctions between their constituent industries. With the exception of some empirical studies comparing internationalization patterns between traditional and innovative/high-tech firms (e.g. Bell, Crick, & Young 2004; Boter & Holmquist, 1996; Shrader, Oviatt, & McDougall, 2000), the role of industry has not been prominent in discussions of SME international business models. The international new venture literature assumes that early internationalization among SMEs is a phenomenon typical of high-tech industries oriented towards innovation rather than of traditional industries (Knight & Cavusgil, 2004; Onetti et al., 2012; Zander, McDougall-Covin, & Rose, 2015). This is consistent with the possibility that SME business model configurations may vary across different industries.

Martins et al. (2015, p.102) argue that managers can actualize 'distinct strategic visions about the opportunities for value creation and capture in their industries, in the business models they create'. A number of considerations suggest that industry membership will be a strong and consistent predictor of differences in SME international business models. Sharing a competitive environment raises the possibility that SMEs located in particular industries adopt generic business models that are similar in the way they configure components such as innovation, core competitive strengths, key network ties, and channels of exporting. Institutional theory suggests that SMEs within particular industries may employ homogenous business models because of

mimetic isomorphism (Cheng & Yu, 2008; Haveman, 1993). While entrepreneurial idiosyncrasy might militate against such contextual conformity, the fact that smaller firms (unlike large corporates) are typically confined to one clearly defined industry segment could lead them to adopt a business model that has many features common to other firms in the same industry (Spender, 1989). Moreover, the power of SMEs to shape the conditions in their industry environment in order to pursue their own idiosyncratic business models is likely to be less than that available to larger firms (Child & Rodrigues, 2011).

The conceptualization of ‘industry’ requires refinement to allow for a more adequate theoretical analysis of why it can be expected to predict the adoption of different SME international business models. Various ‘standard industrial classifications’ applied around the world allocate firms to industries according to their area of economic activity – their products and services. This fails to identify other potentially systematic characteristics of different industries such as whether they have typical strategies, technologies and knowledge domains, and embedded practices (Child & Hsieh, 2014; Christensen & Gordon, 1999). We contend that industry can be regarded as an institutionalized socio-technical system and that this has implications for the homogeneity of business models adopted in a given industry. Industry is institutionalized in that there are regulations, norms and cognitive orientations specific to each industry (Scott, 2014). Shared industry norms exist in respect to accepted competitive strategies and ways of doing business, and these also have a cognitive equivalent in the mindsets that managers tend to have in common (Spender, 1989). The cognitive aspect of institutionalization is also evident in the identity ascribed to a particular industry and the identification with it of the people working in it. Glynn (2008) argues that societal institutions supply a set of possible legitimate identity elements from which cognitive organizational identities can be constructed. The same logic would point to the role of societal institutions in facilitating the construction of industry identities through measures such as the formal classification of different industries and the formulation of rules specifically applying to them. The existence in most countries of industry associations and trade fairs specific to each industry encourages interaction between the personnel of firms within the framework of a common industry identity.

Geels and Schot (2007) apply the concept of socio-technical system to industry and professional communities as an extended version of Nelson and Winter’s (1982) technological regime which referred to shared cognitive routines. Socio-technical system captures two industry-level features – respectively technological and social – that are theoretically relevant to the business models adopted by their constituent SMEs. First, the industrial classifications pioneered by applied economists recognize that the products and activities of firms are embedded in identifiable industry technologies which contrast in their underlying bodies of knowledge (Pavitt, 1984; Tiffin, 2014). They give rise to ‘technological opportunities’ in the sense of growth opportunities offered by product and process innovations (Zahra, 1996). Technological competencies and forms of innovation vary among industries (Fai & von Tunzelmann, 2001). Their contrasting sources and locations of knowledge constitute distinctive resources. In line with the resource-based view of the firm, these knowledge bases provide a competitive advantage and are key to the firm’s business model. While IE scholars such as Oviatt and McDougall (1994) emphasized that innovation is important to explaining early and rapidly internationalizing SMEs, they have rarely considered how different types of knowledge base and competitive strength may be reflected in the business models that the firms follow.

Second, SMEs in different industries are also embedded in idiosyncratic social systems which are interdependent with their technologies. In industries where firms assemble or finish consumer products, they tend to maintain close relations with suppliers and major retail customers, as well as with outsource makers when these are used. Their networks are trading rather than scientific ones, consistent with their

relatively low-technology and need to respond quickly to changing market demands (Dicken, 2015). By contrast, higher-technology SMEs rely on access to highly trained staff and on network links that reflect the high technical level of their work (Salavisa, Sousa, & Fontes, 2012). In research-based industries, staff are typically highly qualified and maintain close links with their scientific communities. Thus technical and social systems are likely to be highly interdependent in ways that are distinctive to their industry. In short, the institutional, technical and social factors distinct to a given industry comprise a strong context for the formulation of a member firm’s business model. This leads to:

H2. SMEs located in different industries adopt different international business models.

2.3.2. Level of home economy development¹

The relevance of national context, especially its institutions, for the internationalization of SMEs has been widely recognized (e.g. Kiss & Danis, 2008; Rugman, Verbeke, & Nguyen, 2011). The extent to which institutions can offer support to internationalizing SMEs is likely to influence which business models it is realistic for them to adopt. For example, if knowledge-producing institutions and the regulations for the protection of intellectual property are weak, SMEs will find it harder to adopt an innovation-based business model (OECD, 2011). Institutions such as government trade promotion agencies, industry associations, research institutes, consultants and commercial funders can provide information on foreign markets, access to relevant technical knowledge, and financial aid to support new market entry. These are among the most significant resources that SMEs require to support their foreign transactions (Liesch & Knight, 1999; Brouthers, Nakos, Hadjimarcou, & Brouthers, 2009). In practice, however, SMEs frequently report a resource-deficiency (Xie & Suh, 2014), which partly due to institutional limitations tends to be greater in less-developed economy environments (Chrysostome & Molz, 2014).

SMEs located in developing economies often suffer from institutional voids, in which the enactment of laws and regulations can be inefficient, corruption and bureaucracy tend to be prevalent, and supporting systems and infrastructures are limited (Mesquita & Lazzarini, 2008; World Bank, 2016). Their internationalization efforts tend to be affected more negatively by low-quality home institutions in comparison to larger firms (LiPuma, Newbert, & Doh, 2013). The under-developed institutional context of developing economies may constrain firms’ in-house development of innovation (Cuervo-Cazurra, 2016) and undermine the benefits of their networking for innovation (Schøtt & Jensen, 2016). Narooz and Child (2017) found that in a developing economy (Egypt), SMEs’ knowledge of opportunities to internationalize through diversified networks was limited by voids in the support from domestic export-promoting institutions. A lower quality of domestic institutions in developing economies therefore encourages SMEs to adopt less risky and less costly international business models; for example, to commit less investment to new product and process development. Kiss et al. (2012) concluded from their review that SMEs from developing and emerging economies tend to focus on less technological intensive business with lower product development costs. Even in a relatively advanced developing economy like China, institutional and resource deficiencies impose real constraints on the ability of SMEs to undertake innovation (Child, 2016). Moreover, the generally lower availability in developing economies of government assistance for exporting, of financial support from agencies such as venture capitalists, and of advanced technical knowledge from universities and research institutes, is likely to diminish the role that such external

¹ In this paper we employ the term “developing” to contrast less developed economies with highly developed ones. Our use of the term includes economies such as China which are commonly labelled “emerging” in view of their somewhat higher per capita income levels, rapid growth and progress in institution building.

network links play in their business models (Global Entrepreneurship Monitor, 2016; World Bank, 2016). By contrast, developed economies tend to have a range of accessible and efficient sources of external support. This makes it easier for SMEs to use a wide range of institutional and professional service links in addition to traditional market ones (Ciravegna, Lopez, & Kundu, 2014; Khanna & Palepu, 2010), which in turn is conducive to contextualizing innovation to suit foreign markets (Nordman & Tolstoy, 2016).

Although our understanding of the links between home institutional characteristics and SME internationalization policies remains incomplete (Schwens, Eiche, & Kabst, 2011), the balance of evidence suggests that:

H3. SMEs from developed economies adopt different international business models to SMEs from developing economies, particularly models that are more innovation-based.

2.3.3. International experience of key SME decision-maker(s)

Experiential knowledge is an important antecedent of SMEs' ability to engage in international activities (Evangelista & Mac, 2016; Stucchi, 2012). It provides an input to, and helps develop, cognitive reasoning that compares previously experienced situations and newly encountered ones (Hsu, Chen, & Cheng, 2013; Jones & Casulli, 2014). International experience develops such knowledge in several ways. It can derive from the direct previous involvement of an entrepreneur in business with foreign markets. It may also benefit from a growing circle of network partners that entrepreneurs have developed along with their broadening experience (Calabrò, Campopiano, Basco, & Pukall, 2017). These partners can offer various benefits ranging from information on international opportunities to resource provision and capability enhancement. SMEs founded by individuals or teams of individuals with international experience tend to become international at an early stage in their lives (McDougall, Shane, & Oviatt, 1994) and they also tend to use a greater number of strategic network partners. These concomitants of individual international experience have both been found to lead to a greater degree of firm internationalization (Reuber & Fischer, 1997; Sahaym & Nam, 2013).

The business model literature recognizes that entrepreneurs can exercise a degree of strategic choice over their business models which may be guided *inter alia* by their previous experience. However, the environment is not completely exogenous to that choice (Demil et al., 2015). Building on the resource-based view and a cognitive perspective, the decision-maker's previous international experience can reasonably be assumed to inform his or her decision logic concerning the configuration of a firm's business model. There is, however, some debate as to whether such experience encourages greater rationality, and hence sensitivity to relevant contingencies or whether, on the contrary, it encourages entrepreneurial idiosyncrasy. On the one hand, Child and Hsieh (2014) conclude from studies such as Hilmersson and Jansson (2012) and Schweizer (2012) that increased international experience induces entrepreneurs gradually to use more rational decision-making modes. Moreover, previous international experience can enhance the knowledge and network links of SME leaders, thus enabling them to adopt international business models that are more rationally adapted to the contingencies affecting their firms. On the other hand, decision-makers with greater international experience have been found to rely less on systematic market analysis (Collinson & Houlden, 2005), and even to be overconfident in their decision-making (Milanov & Maissenhalter, 2015). Though their arguments contrast, the logic of both views is that greater previous international experience is likely to increase the chance of differentiation in the business models adopted across a range of SMEs. Thus:

H4. The international experience of SME decision-makers contributes to differentiation between the international business models that they adopt.

3. Method

3.1. Sample, data collection and coding

The sample consists of 180 SMEs employing less than 250 personnel, 60 of them operating respectively in the clothing, software and biotechnology industries, and evenly distributed between six economies – the Arab Middle East, China, Denmark, India, Poland and the UK.² The 30 SMEs in each economy were evenly distributed between the three industries. The sample was a non-probability purposeful one. It did not aim to represent a given population, but rather to provide a set of firms that met certain criteria. These were, firstly, variance in two contextual factors – industry and domestic economy – that on the theoretical grounds explicated in H2 and H3 we expected to influence SME business models for internationalization. Secondly, the firms selected should employ below 250 personnel and should be actively engaged in international business. Within the requirement that there should be an equal number of SMEs located in developed and developing economies, the inclusion of three economies for each category avoids the risk of drawing conclusions from single contexts. The choice of the specific countries meeting these criteria reflected the availability of local researchers known to have necessary language and subject-area competences. Firms were added to the sample until target numbers were met; 54% of firms approached agreed to participate in the study.

The data derive from semi-structured interviews using a mixture of open and closed-ended questions designed to study how SMEs internationalize. They were conducted between 2012 and 2014 in each SME with its principal decision-maker on internationalization. The on-site visits provided a good understanding of the sampled firms' activities. The interviews lasted between one and two hours; they were digitally recorded and transcribed. Outside the UK, the interviewers were bilingual in the local language and in English to degree level (cf. Welch & Piekkari, 2006); all were specialists in the field of international business and had extensive local area knowledge.

The interview schedule was standardized in order to ensure consistency of measures and reliability within the multi-case and multi-country research process. It served as a replication guide for the researchers that ensured stability in data collection (Miles, Huberman, & Saldaña, 2014; Silverman, 2009). Although many questions were factual in nature, various steps were taken to develop and maintain a common understanding of all questions and of the meanings to be attached to qualitative responses as well as to control for the impact of multiple interviewers. There was a process of interviewer preparation concerning issues such as the establishment of rapport, identification of follow-up questions, avoidance of leading questions, and use of probes (Boutain & Hittu, 2006). Strict control of the interview process and training of the interviewers also helped to achieve consistency (Harris, 2000). This was reinforced by the participation of the first author in a selection of interviews conducted in four countries other than his own. All project members participated in four face-to-face meetings, each lasting three days. There were further personal meetings between sub-groups within the project. An essential role was performed by 32 regular Skype conference calls among project members, each lasting at least one hour, all of which were minuted. Regular emails were also exchanged several times each week.

Transcripts of initial interviews were analyzed at one of the face-to-face meetings to ensure common understanding and interpretation. A coding scheme was developed and subsequently refined as a result of each team member undertaking the cross coding of six cases from one of the other countries. Overall inter-coder agreement in the cross-coding was 79.7%. Subsequently differences in the initial coding were identified and discussed. After six months of discussions, consensus was

² The Arab Middle East in this sample is actually a region consisting of three countries, Egypt, Jordan and the UAE. However, it is treated as one unit.

Table 1
Measures of business model components and their predictors.

Variable	Interview questions	Operational measure(s)
<i>Business model components</i>		
<i>Innovation</i>		
R & D intensity	How many people do you have working on research and development? What is the company's present size in terms of total employment?	R & D staff as percentage of total employment
Exploration	Have you had to develop new products or services as a basis for going abroad?	Scored: 0 if No; 1 if Yes
Exploitation	Have you had to carry out any modification to your existing products or services to supply them abroad?	Scored: 0 if No; 1 if Yes
<i>Core competitive strengths</i>		
	What are the company's core competitive strengths?	Innovation capability; flexibility; customization; speed and reliability of delivery; supply chain management (For each, 0 if not mentioned, 1 if mentioned) – see Appendix A for derivation.
<i>Key external network links</i>		
	Which network contacts are key sources of assistance for the firm's internationalization?	Whether customers; suppliers; universities/research institutes are perceived to be key sources of assistance for the firm's internationalization (For each, 0 if No, 1 if Yes)
<i>Transactional channels to foreign markets</i>		
	How do you sell your products or services to foreign markets?	Internet; direct exporting; exporting via agents/distributors; licensing (For each, 0 if No, 1 if Yes)
<i>Business model predictors</i>		
<i>Industry</i>		
		Clothing = 1, Software = 2, Biotech = 3, according to the knowledge base typical of each industry
Type of economy		Developing economy = 1, Developed economy = 2
International experience of decision-maker	Did you have experience in doing business internationally prior to joining or founding the firm?	Scored: 0 if No; 1 if Yes
Firm size	What is the company's present size in terms of total employment?	Total number of employees
Firm international experience	When did your company first make any sales abroad?	The number of years since the firm first made any sales abroad

reached in all instances of initially divergent interpretation. The refined coding scheme was then used to code all transcripts. Once the data had been coded and entered into an SPSS data file, frequency runs and tabulations were performed as a further check on coding anomalies and to reduce validity concerns.

3.2. Measures

Table 1 lists the components of the business model (*innovation, core competitive strengths, key external network sources of assistance for internationalization, transactional channels to foreign markets*) and their predictors. It indicates the relevant questions asked in the interviews and how replies were operationalized. Some items are factual in nature and are recorded either directly (e.g. R & D intensity) or in terms of their presence or absence (e.g. exploratory innovation, use of transactional channels). Others, notably core competitive strengths, are perceptual in nature and are coded from an analysis of interviewee statements.

Previous research (e.g. Miller & del Carmen Triana, 2009) has supported the use of a firm's R & D intensity as an appropriate proxy for its *innovation*. R & D intensity is measured by R & D staff as a share of the total employment (Faems, De Visser, Andries, & Van Looy, 2010; Shefer & Frenkel, 2005). However, because R & D intensity does not readily capture innovation in lower-technology industries such as clothing (for instance innovation in aesthetic design), we also assessed innovation activities with reference to exploratory and exploitative innovation in line with March's (1991) conceptualization. While the presence or absence of these two innovation activities could readily be identified, in many firms the same staff were engaged in both and it was not possible to obtain an accurate allocation of expenditure and staff as between them. We assessed *core competitive strengths* in terms of five second-order themes which arose in open-ended interview responses. These emergent constructs are innovation capability, flexibility, customization, speed and reliability of delivery, and supply chain management. Appendix A indicates how they were derived from interviewees' statements. They correspond closely to strengths that are also identified in the literature on SME competitiveness (e.g. Gassmann & Keupp, 2007; Jayaram, Dixit, & Motwani, 2014; Vossen, 1998; Weerawardena, Mort, Liesch, & Knight, 2007). Following previous studies on sectoral

differences in the use of external network links (e.g. Child & Hsieh, 2014; Freel, 2003), *key external network sources of assistance for internationalization* were assessed with reference to whether three distinct categories of network links (with customers, suppliers, and university/research institutes) had assisted their internationalization. It emerged from the interviews that the main *transactional channels* to foreign markets used by SMEs were the internet, direct exporting, exporting via agents/distributors and licensing, in line with previous findings (Hessels & Terjesen, 2010; Sinkovics, Sinkovics, & Jean, 2013).

It should be noted that where data are coded in binary categories, these were not presented in interviews a priori. The interviews mostly employed open-ended questions; our procedure was to record accurately what respondents said and then often to code whether or not a particular item was mentioned. For this mode of data capture it was not considered generally appropriate to constrain respondents' views into predetermined scales devised by the researchers.

The predictors of business model examined are *industry, level of home economy development, and the international experience of decision-makers* (see also Table 1). Justifications for their selection were advanced in the rationales for H2, H3 and H4. Based on Bell et al.'s (2003, 2004) threefold distinction between traditional, knowledge-intensive and knowledge-based SMEs, industry was categorized in terms of the degree that advanced knowledge plays in their activities (clothing = 1; software = 2; biotech = 3). Clothing is an example of traditional industry in which the advanced knowledge is not intrinsic to market offerings. Software and biotech firms, which respectively fall into the knowledge-intensive and knowledge-based industry categories, rely more on advanced knowledge. Software firms usually are not inherently knowledge-based and they tend to use advanced knowledge to develop new offerings. In contrast, biotech firms can usually be considered as 'first-movers' in niche markets and new knowledge is intrinsic to their market offerings. The level of economic development was measured in terms of the distinction between the developed economies and developing economies (Ciravegna et al., 2014). In our sample, Denmark, Poland and the UK are classified as developed economies, while the Arab Middle East, China and India are classified as developing

economies.³ The international experience of decision-makers was operationalized as whether they had previous experience in international business prior to joining or founding the firm (Nielsen & Nielsen, 2011; Reuber & Fischer, 1997).

Two control variables are also included in the regression analysis: *firm size* and *length of firm international business experience*. Firm size (total employment) potentially influences the choice of business model as larger firms tend to have a greater capacity to adopt more resource-consuming business models, such as those requiring a significant innovation effort (Bock, Opsahl, George, & Gann, 2012). Moreover, it is well known that larger firms tend to pursue a more rational approach to decision-making, which increases the likelihood that they will adjust their business model in the light of their context and decision-maker experience (Elbanna & Child, 2007).

The firm's international experience was measured by the number of years during which it had been engaged in sales to foreign markets (Zhou, 2007). A firm's international business experience potentially influences its choice of business model (Clarke, Tamaschke, & Liesch, 2013). One consideration is that an accumulation of international experience can assist an SME to formulate a business model that is fine-tuned to the competitive conditions it faces in foreign markets as well as to useful external sources of support. Another is that young internationalizing ventures characterized by a shorter internationalization history tend to base their business model on knowledge creation and exploitation, and niche technologies, as sources of competitive advantage (Autio, Sapienza, & Almeida, 2000).

3.3. Data analysis

To address our first research question, we followed a configurational approach by applying latent class analysis [LCA] (Ebers & Oerlemans, 2016). The Mplus software version 7.4 was used. We assumed that international business models are unobserved latent classes which can be observed through manifested indicators (Olejnik & Swoboda, 2012). LCA analyses the interrelatedness among variables by explaining the unobserved heterogeneity in response-profiles (Baum, Schwens, & Kabst, 2015; Olejnik & Swoboda, 2012). This statistical method provides a more reliable estimation of business model configurations than traditional cluster analysis because it is a model-based clustering approach which allows the assessment of appropriate number of classes based on goodness of fit indices (Nylund, Asparouhov, & Muthén, 2007). 'Determining the number of latent classes is less arbitrary in LCA than when using traditional cluster methods' mainly because it is based on a testable model (Notelaers, Einarsen, De Witte, & Vermunt, 2006, p.291). LCA ensures validity by accounting for measurement errors of the indicators (Baum et al., 2015). To address our second research question, we used multinomial logistic regression (MLR) analysis to identify the predictors of variation in SME international business models.

4. Results

Table 2 reports the means, standard deviations and correlations of the variables. The Phi coefficient was used to estimate the strength of association between two binary variables and Cramer's V was used to assess the correlation between sector and binary variables (Field, 2013). Biserial correlation was used to estimate the strength of associations between binary and continuous variables (ibid). None of the correlations between predictor variables exceed 0.40 and all the VIFs are well below the suggested threshold of 10 (Hair, Black,

³ While Poland, along with other Central and Eastern European economies, was considered to be emerging in the 1990s (Meyer & Peng, 2016), it is today classified as a developed economy by the United Nations – see http://www.un.org/en/development/desa/policy/wesp/wesp_current/2014wesp_country_classification.pdf, accessed 26 January 2016.

Babin, & Anderson, 2009). Thus, multicollinearity is not a concern in this study.

4.1. SME international business models

We conducted a step-wise analysis by computing several latent class models and compared them with each other using the Akaike's and Bayesian information criteria (AIC and BIC) to decide the number of classes (Nylund et al., 2007). It was found that a three-class solution provides the best model fit because it has smaller AIC (4121.96) and sample-size adjusted BIC (4123.19) than a two-class solution (AIC = 4327.88, sample-size adjusted BIC = 4328.71) or a four-class solution (AIC = 4270.79, sample-size adjusted BIC = 4272.45), indicating an optimal balance between fit and parsimony. The analysis identifies three configurations of international business model that prevail among SMEs in our sample. Each configuration of business model has its distinctive features in terms of innovation, core competitive strengths, key external network sources of assistance for internationalization, and transactional channels. Hence, Hypothesis 1 was supported. The class-specific conditional probabilities for each of the business model components derived from the three-class model are reported in Table 3.

Sixty-five SMEs are assigned to the first international business model configuration (Class 1). This displays the lowest level of R & D intensity out of the three configurations. SMEs following the Class 1 business model have a high probability of modifying existing products or services in order to enter foreign markets (exploitation, 82%) but a low probability of developing new products or services in order to enter those markets (exploration, 29%). The Class 1 business model also has the lowest probability (23%) of including innovation capability as a core competitive strength. In comparison to the Class 2 and Class 3 models, SMEs in Class 1 had a somewhat higher probability of regarding flexibility (23%) and speed and reliability of delivery (20%) as core competitive strengths. Additionally, they had high probabilities of identifying suppliers (60%) and customers (86%) as key external network sources of assistance for internationalization. SMEs in Class 1 also had the highest probabilities of using direct exporting (92%). Overall, this international business model appears to be one that secures value through rapid market responsiveness rather than through technological innovation. Given these characteristics, we label Class 1 as a 'traditional market-adaptive' business model.

Fifty-seven SMEs are assigned to the Class 2 international business model configuration. This business model shares some features with Class 1, namely quite a high level of exploitation (71%), a low level of exploration (29%), and identifying customers as key external network sources of assistance for internationalization (71%). However, the SMEs in Class 2 have a somewhat higher level of R & D intensity and a significantly higher probability of regarding innovation capability as core competitive strength (84%). They also have a higher probability of using the internet as their transactional channel (28%). In view of the fact that SMEs adopting this model devote their innovation capabilities primarily to exploiting existing knowledge, we label Class 2 as a 'technology-exploiter' business model.

Another fifty-seven SMEs are assigned to the Class 3 international business model configuration. This business model displays a very high level of R & D intensity, high probabilities of both exploration (66%) and exploitation (61%), and a high probability of regarding innovation capability as a core competitive strength (87%). SMEs in this class are more likely to identify customers (90%) and universities/research institutes (68%) as key external network sources of assistance for internationalization. They also had the highest probability of using licensing as a transactional channel (45%). SMEs in this class displayed more of a balance than the other two classes between direct exporting (58%) and exporting via agents/distributors (44%). This business model combines exploration and exploitation, though with a much greater investment in exploration than the other models. We therefore call Class 3 an 'ambidextrous explorer' business model.

Table 2
Descriptive statistics.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	1																			
2	0.01	1																		
3	-0.08	-0.40**	1																	
4	-0.36**	0.11	0.29**	1																
5	0.16	0.08	-0.09	-0.13	1															
6	0.43**	0.38**	-0.41**	-0.33**	0.26**	1														
7	0.27**	0.06	0.00	-0.14	0.31**	0.32**	1													
8	0.32**	0.01	-0.02	0.25**	-0.03	-0.09	0.04	1												
9	0.54**	0.08	-0.20**	-0.26**	0.22**	0.34**	0.17*	-0.05	1											
10	0.23**	0.11	-0.15**	0.03	0.03	-0.02	-0.16*	0.06	-0.03	1										
11	0.24**	0.04	-0.17*	0.02	0.00	0.05	0.04	0.18*	0.05	0.23**	1									
12	0.19*	0.10	0.11	0.11	0.05	-0.16*	-0.02	0.07	-0.10	0.02	-0.13	1								
13	0.25**	0.09	0.07	0.10	0.03	-0.03	0.02	0.09	-0.09	0.19*	0.04	0.06	1							
14	0.12	0.10	-0.13	-0.08	-0.03	0.07	-0.01	0.07	0.14	0.07	0.10	-0.05	0.03	1						
15	0.26**	0.07	0.11	0.10	0.05	-0.03	0.02	0.12	-0.12	0.11	0.09	0.06	0.06	0.13	1					
16	0.40**	0.18*	-0.09	-0.16*	0.20**	0.30**	0.18*	-0.09	0.21**	-0.06	-0.09	-0.10	-0.05	0.25**	0.03	1				
17	0.30**	0.13	-0.12	-0.20**	0.09	0.08	0.07	0.06	0.05	0.10	0.02	0.00	-0.04	-0.07	-0.16*	-0.03	1			
18	0.34**	0.02	0.07	0.17*	-0.18**	-0.18*	-0.04	-0.07	-0.26**	0.00	0.13	0.05	0.10	0.15	0.09	-0.11	-0.24**	1		
19	0.25**	0.07	-0.04	0.11	0.14*	-0.06	-0.06	0.06	-0.11	0.02	-0.06	0.00	-0.04	-0.21**	0.03	-0.01	-0.09	-0.17*	1	
20	0.27**	0.25**	-0.10	-0.18*	0.18**	0.20**	0.18*	0.00	0.18*	-0.05	-0.02	-0.08	-0.12	0.08	-0.01	0.31**	0.00	-0.21**	0.05	1
Mean	2.00	1.50	80.44	12.24	0.49	27.36	0.41	0.72	0.63	0.15	0.26	0.12	0.04	0.83	0.43	0.32	0.17	0.69	0.42	0.20
S.D.	0.82	0.50	76.79	11.33	0.50	27.60	0.49	0.45	0.49	0.36	0.44	0.33	0.21	0.38	0.50	0.47	0.38	0.46	0.50	0.40
VIF	2.35	1.68	1.71	1.56	1.29	1.95	1.38	1.27	1.63	1.22	1.15	1.10	1.14	1.32	1.13	1.46	1.23	1.37	1.18	1.28

Note: 1, Industry (clothing = 1; software = 2; biotech = 3); 2, Economy (developing = 1; developed = 2); 3, Firm size (total employment); 4, Firm international experience; 5, Decision-maker (DM) international experience; 6, R & D intensity; 7, Exploration; 8, Exploitation; 9, Innovation capability; 10, Flexibility; 11, Customization; 12, Speed and reliability of delivery; 13, Supply chain management; 14, Customers; 15, Suppliers; 16, Universities/research institutes; 17, Internet; 18, Direct exporting; 19, Exporting via agents/distributors; 20, Licensing. * Correlation is significant at the 0.05 level; ** Correlation is significant at the 0.01 level.

Table 3
Three-latent-class model of business model configurations.

N = 179 ^a	Class 1 <i>Traditional market-adaptive business model</i> n = 65	Class 2 <i>Technology-exploiter business model</i> n = 57	Class 3 <i>Ambidextrous explorer business model</i> n = 57
Probability of membership	0.36	0.32	0.32
Indicators of latent class			
Conditional probability of a Yes response			
<i>Innovation</i>			
R & D intensity ^b	10.22	17.80	56.30
Exploration	0.29	0.29	0.66
Exploitation	0.82	0.71	0.61
<i>Core competitive strength</i>			
Innovation capability	0.23	0.84	0.87
Flexibility	0.23	0.08	0.13
Customization	0.25	0.28	0.26
Speed and reliability of delivery	0.20	0.10	0.06
Supply chain management	0.09	0.00	0.02
<i>Key external network link</i>			
Customers	0.86	0.71	0.90
Suppliers	0.60	0.24	0.41
Universities/research institutes	0.14	0.17	0.68
<i>Transactional channel</i>			
Internet	0.09	0.28	0.16
Direct exporting	0.92	0.54	0.58
Agents/distributors	0.49	0.33	0.44
Licensing	0.05	0.13	0.45

^a Due to non-availability in one firm of data on international experience of decision-makers, the N is 179.

^b The estimated class means are reported.

4.2. Business model predictors

The MLR results in Table 4 show that differences between the three business models are statistically highly significant (Chi-square = 306.943, $p < 0.001$), with 91.9% of the cases being correctly classified by reference to the postulated predictors. The pseudo R-Square falls between 0.82 (Cox and Snell) and 0.923 (Nagelkerke).

Industry is a consistently significant predictor across all three business models when comparing two of them at a time in models A, B and C (Table 4). This strongly confirms Hypothesis 2 that SMEs located in different industries adopt different international business models. The industry contrast is particularly marked as between the traditional market-adaptive model (Class 1) and the other two: 89 percent of the SMEs adopting this business model are in the clothing industry and the remaining 11 percent are in software. The majority of SMEs adopting the technology-exploiter model (Class 2) are software firms (60 percent) and all but one of the remainder are biotech firms (39 percent). No clothing firms adopted the ambidextrous explorer model which is predominantly followed by biotech firms (67 percent).

Hypothesis 3. posited that SMEs from developed economies are likely to adopt different, and in particular more innovation-based, international business models in comparison to those from developing economies. Models B and C indicate that business model configurations Class 1 or Class 2 are more likely to be adopted by SMEs from developing economies (66 percent adopting these models are from developing economies). By contrast, SMEs from developed economies are more likely to choose business model configuration Class 3 (82 percent adopting this model are from developed economies). Hypothesis 3 is therefore supported.

Hypothesis 4. predicted that SMEs whose key decision-makers have previous international experience are more likely to differentiate among the contrasting international business models they adopt when compared to decision-makers without previous international experience. In Models A, B and C, the international experience of decision-makers is a consistently significant discriminator, which strongly confirms Hypothesis 4. The majority of SMEs adopting the ambidextrous explorer model have key decision-makers with previous international experience (72 percent).

Table 4
Multinomial logistic regression results.

Reference Category	Model A	Model B	Model C
	Class 2 Class 1	Class 3 Class 1	Class 3 Class 2
Intercept	B (Sig.) –24.208	B (Sig.) –30.650	B (Sig.) –6.441
Predictors			
Industry	27.124 (0.000)	31.644 (0.000)	4.520 (0.000)
Developing economy	–2.383 (0.086)	–9.661 (0.000)	–7.278 (0.000)
DM international experience	21.253 (0.000)	9.661 (0.000)	2.031 (0.007)
Control variables			
Firm size (log)	–1.084 (0.057)	–0.609 (0.357)	0.475 (0.178)
Firm international experience	–0.183 (0.056)	–0.467 (0.000)	–0.284 (0.000)

N = 179, Chi-Square = 306.943, Correct classification = 91.1%, Cox and Snell $R^2 = 0.82$, Nagelkerke $R^2 = 0.923$.

Among the control variables, firm size does not contribute to predicting differences between the three international business models. However, the results in Table 4 suggest a firm's length of international business experience has some effect. SMEs with shorter international experience are more likely to belong to Class 3 than to Class 1 or 2.

In sum, three distinct international business models (*traditional market-adaptive*, *technology-exploiter*, *ambidextrous explorer*) are found among the SMEs studied, and the differences between them are predicted by industry, level of home economy development, and previous international experience.

5. Discussion

The results of our investigation confirm the utility of the business model concept that views the resource-based and transactional characteristics of a firm as sources of value creation in its domain – in this case in foreign markets. Additionally, the likelihood of SMEs adopting one class of business model rather than another is to a high degree predictable parsimoniously with reference to a small set of factors. The two following sections consider the interpretation of these findings and their implications for theorizing about SME international business models.

5.1. Interpretation

Industry clearly emerges from this study as a major contextual referent for SME international business models. Consistent with the institutionalized socio-technical system conceptualization of industry, the technological capability and resource profiles of each industry, and its institutionalized networking practices, help to account for this finding.

SMEs in the clothing manufacturing industry tend to adopt a *traditional market-adaptive international business model*, which appears to be less risky and costly in comparison to the more technological innovation-based models. This reflects the fact that clothing SMEs have to operate in an industry with a relatively short product life cycle and tight seasonal schedules and lead times, and they do not have the luxury to engage in a more exploratory type of innovation (Dicken, 2015). Their links and relationships with suppliers are particularly important because suppliers are not only an important source of innovation when there is little internal R & D, but also impact on the speed and delivery capability of clothing SMEs. For clothing firms, innovation does not play a prominent role in their international business model (Brenton & Hoppe, 2007). Rather, flexibility and ensuring reliable delivery are important competitive requirements in global markets. (Aspers, 2010; Möller & Törrönen, 2003; Zucchella & Siano, 2014). Compared to SMEs located in the other industries, suppliers are therefore key network contacts for assisting the internationalization of clothing SMEs (Bruce & Daly, 2011; Bruce & Moger, 1999). At the same time, the business model of clothing firms is strongly demand-led and links to customers also play an important role in offering market information and introductions to new customers. Export sales primarily go directly to retailers or to international trading houses (Jones, 2006). This group of customers not only is useful in providing market information, but also has considerable influence on the value creation activities of clothing SMEs in terms of requiring them to react promptly to and meet changing market trends and customers' requirements.

Most of the SMEs in our study adopting the *technology-exploiter international business model* are located in the software industry. In that industry, an SME's business model tends to be driven by an entrepreneur's recognition of new technical possibilities to meet market needs (Buxmann, Diefenbach, & Hess, 2013; Sarrazin & Sykes, 2013). Although there are exceptions (such as the producers of computer games), the business model is generally demand-led. Many SMEs in the software industry are 'specialized suppliers' that design, develop and produce solutions tailored specifically to a particular production process or need of customers (Tiffin, 2014). Although the life cycle of

system software is usually longer than that of clothing, the rapid technological change in the industry highlights the importance of the innovation capability of software SMEs. Most new versions of system software are usually developed and built on existing architectures and the exploratory type of innovation does not necessarily play a central role (Aramand, 2008). Hence, an ability to exploit technology (e.g. open source software or platform) to meet specific customer requirements is a particularly important source of competitive advantage for many software firms. The technology used is primarily a synthesis of existing knowledge though sometimes involving novel combinations and flair of a tacit nature. Key sources of knowledge are founding entrepreneurs, other software firms, and downstream customers developing new applications (Chetty & Stangl, 2010). Export sales of software are mainly directly to end-users, often delivered through the internet.

Many of the sampled biotech SMEs studied adopted the *ambidextrous explorer international business model*. Their products normally enjoy a long life cycle which is preceded by a lengthy period of development. Typically biotech firms commit significant R & D resources to develop new proprietary formulations and high value-added services that meet a common medical need in export (as well as domestic) markets (Fisken & Rutherford, 2002). There may be limited product adaptation to different markets. Biotech SMEs tend to compete on the basis of scientific innovation. Hence, universities and research institutes are the most important sources of their new knowledge, which has a high exploratory component. In addition, their scientific networks can link these SMEs into foreign markets (Al-Laham & Souitaris, 2008; Delerue & Lejeune, 2012; Murray, 2004). Such knowledge-providing links can provide significant first-mover advantages (Gassmann & Keupp, 2007; Masango & Marinova, 2014; Powell, Koput, & Smith-Doerr, 1996). Biotech firms can also be highly dependent on pharmaceutical company customers (Salavisa et al., 2012). The ambidextrous nature of the biotech business model largely results from the ways that many biotech firms complement discovery work with more routine analytical 'contract research', exploiting existing knowledge, in order to provide cash flow to sustain themselves during the long product development cycle. Contract research and low-level development of existing formulations may actually constitute the primary activity of biotech SMEs in countries where high-level scientific research input is not available.

The level of development of the SME's home economy also predicts the business model it is likely to adopt, though it is weaker than the industry effect. The greater resource and institutional capabilities of developed economies play a significant role here, indicating the importance of (1) resource-based and (2) institutional explanations for business model analysis. We find that SMEs located in developed economies are more likely to adopt an ambidextrous explorer or technology exploiter business model with a high innovation capability. By contrast, the SMEs from developing economies tend to focus on business models that involve less R & D and radical innovation. These findings reflect the generally less advanced development of science and technology-providing institutions in developing economies, even in those like China which are making strenuous efforts to catch up (Child, 2016). This is consistent with previous research (Kiss et al., 2012) and the observation that developing economies are characterized by greater institutional voids (Khanna & Palepu, 2010). Moreover, SMEs in developing economies can often enjoy the spill-over effect of innovative product development in developed economies. Our research suggests that among such SMEs the incentive to do original R & D is largely absent, and that they prefer a short- rather than long-term oriented development strategy.

SMEs in which the *key decision-maker(s) have previous experience of international business* prior to joining or founding the firm are more likely to adopt the ambidextrous explorer business model. Our results indicate that the previous international experience of an SME's main decision-maker has a greater ability to discriminate between

international business models than does the firm's length of international experience. A firm's experience of doing international business may be dispersed among several actors, some of whom are no longer with the firm. If so, that may weaken its impact on current business model formulation. By contrast, the international experience of the individual primarily responsible for devising an SME's business model is a direct point of reference for that key actor and is therefore likely to have a significant influence on the decisions made in shaping its business model. Moreover, decision-makers with an established record of involvement in international business are likely to have built up a wider network of relevant contacts which is a potential source of normative advice as to which business model to adopt given the firm's circumstances.

5.2. Theoretical implications

Considered overall, our findings and their interpretation point to the heavily situated nature of SME business models. The three identified business models were highly predictable by reference to the firms' context. This context dependency is consistent with two circumstances characterizing most SMEs. One is the tendency to operate in just a single industry which therefore assumes correspondingly greater salience for the firm. The other is the limited power of SMEs to shape external conditions in a way that enhances their strategic choice – i.e. scope to pursue their own idiosyncratic business models. As mentioned earlier, these features distinguish SMEs from most MNEs. Entrepreneurial originality is, of course, found in smaller firms and may give rise to idiosyncratic business models that break contextual bounds. Nevertheless, our findings suggest that SME business models can be predicted and explained by reference to the contours of their operational environment. In other words, 'the business model as a concept becomes fully comprehensible only through action in the business context where it is created' (Ahokangas & Myllykoski, 2014; p. 14).

The decision-makers in the SMEs studied tended to select business models on the basis of shared industry-specific (and to some extent country-specific) conditions. This suggests the presence of contextually-informed recipes, which can be seen as sets of heuristics or decision rules that inform the design of international business models. Accordingly, the choice of international business model would reflect the understanding and logic of managers about how to create value for their firm, as well as its customers, within specific contexts (Doz & Kosonen, 2010; McQuillan et al., 2016; Spender, 1989). Yet while contextually-informed isomorphism might be a boundedly rational way of dealing with the complexities of internationalization, it does not convey the whole picture. This is because the previous international experience of decision-makers inclined them toward adopting the ambidextrous explorer business model. The knowledge and confidence that previous international experience presumably imparted appears to have disposed them toward adopting a relatively ambitious and risky business model. The theoretical implication here is that however analytically powerful contextual (resource-based and institutional) perspectives of the firm may be, their explanations for business model choice need to be complemented by considerations of individual cognition and preference.

6. Conclusion

6.1. Contributions

We have aimed to identify different international business model configurations and enhance our understanding of what accounts for the variance in the choice by taking into account the role of context and experience. This offers several contributions to the literature on SME international business models. First, we contribute new insights through empirically identifying a typology of SME international business models. Although the limits to our sample assuredly mean that this

typology is as yet not complete or fully tested, it does represent one of the first systematic comparisons by means of latent class analysis to identify different business model configurations adopted by SMEs in respect of their international business. Additionally, previous work on the design of international business models (e.g. Lee, Shin, & Park, 2012; Rask, 2014) has emphasized the spatial geographical dimension rather than the creation of value through exploiting firm competencies. By contrast, our typology of business model incorporates several sources of value creation by SMEs: innovation activities, other core competitive strengths, key external network ties, and market transactional channels. It is relatively comprehensive and in line with the recent development of business model conceptualization that is embedded in resource-based and transactional theories. Our study confirms the utility of applying a combination of resource-based and transactional approaches to the conceptualization of international business models. It can be seen as an initial step towards the development of a more elaborated empirically-derived taxonomy of international business models that would not only provide better insight into the diversity of internationalizing firms but also into how specific business models promote internationalization.

Informed by resource-based, institutional and cognitive perspectives, we also develop an explanation for the findings that variation in SME international business models is predicted by industry, level of home economy development and the previous international experience of decision-makers. We identify industry as an important factor in discriminating among SME business models that needs to be given much greater attention as a key contextual attribute in future research. Although the general thesis of a firm-industry fit has a long history, there has been little theorization or empirical investigation of how the characteristics of different industries may shape the business models of member SMEs and whether their business models tend to be differentiated along industry lines. While there are studies investigating the internationalization of SMEs in given sectors (e.g. Gassmann & Keupp, 2007; Ojala & Tyrväinen, 2006), comparative studies that discuss different industry contexts and their associations with firm behavior remain relatively rare (Messner, 2016). A unique contribution of the present study lies in its comparative scope across both industries and economies.

Moreover, when it has been considered in quantitative studies, industry is usually either translated into other variables such as rate of growth, environmental uncertainty, competitive intensity, or regulatory pressure or it is controlled for by introducing industry dummy variables in a statistical model (Sharp, Bergh, & Li, 2013). This approach fails to conceptualize industry holistically as a multi-faceted context in which firms are socially embedded and how that context shapes specific features of their modus operandi. In offering an interpretation of our findings, we suggest that industry can fruitfully be conceptualized as a multi-faceted socio-economic phenomenon rather than as just a product or service category in a standard industrial classification [SIC].

While the relevance of level of national economic development for the internationalization of SMEs has been widely recognized, especially with respect to institutional and resource impacts, the specific implications for their business models have not been well understood. A further contribution therefore lies in our identification of a variance in SME international business models, particularly in their innovation-orientation, that is associated with the level of domestic economic development. Given that most research to date has focused on SMEs from developed economies, this finding serves as an impetus to further investigation into the internationalization models and paths of developing economy SMEs.

Finally, this paper contributes to the emergent literature on the microfoundations of business model design (Demil et al., 2015; Teece, 2007). Our results show that the international experience of SME decision-makers discriminates between different international business models. Decision-makers who have prior international experience are likely to draw on cognitive resources and expertise that have been built

from their previous employment or international assignments, which in turn shape their choice of business models (Jones and Casulli, 2014; Jones & Casulli, 2014). This highlights the potential of variation in the understanding and preferences of SME managers for helping to explain differences in business model selection. It is consistent with the argument of Peng, Sun, Pinkham and Chen (2009) that while the three legs of their ‘strategy tripod’ – industry conditions, firm-specific resources and institutional conditions – establish constraints on firms, their decision-makers can nonetheless exercise a degree of strategic choice.

6.2. Limitations and avenues for future research

The study presented here has a number of limitations that further research could aim to overcome. The items we have used to measure the business model do not extend to all the dimensions proposed by existing studies. For instance, we focused on activities to create value rather than on mechanisms to capture revenue. Analyzing SME business models employing more comprehensive measures such as those developed by Clauss (2017), or refining measures through further qualitative investigation, should improve our understanding of SME international business models.

Second, the business model predictors on which we focused, although significant, are not necessarily exclusive of others. Other potential predictors at different levels are candidates for future investigation. At the individual level these include the quality of key decision-makers’ training; at the firm level, managerial capability and available organizational slack (especially with respect to adopting hybrid business models); and at the contextual level, national culture.

Third, our findings point to context exerting a strong influence in molding SME international business models. How much this is due to material factors (such as industry technical knowledge base, national institutional support) and how much to mimetic isomorphism (adhering to the reference group norm) remains to be clarified. We have demonstrated that a specific business model is more likely to be found in a particular context (industry, level of home country development) and suggested that knowledge is an important underlying dimension. However, further insight into underlying rationales requires a more in-depth qualitative investigation paying particular attention to how decision-makers understand the meaning and implications of their context. The performance consequences of matching international business models to the firm’s context is another important question for future research.

Fourth, there are limitations in our research design which future investigations could also aim to overcome. A larger sample than ours may identify some variation in business models within given industries and economies possibly arising from the specific economic and social parameters that prevail. For instance, even among developed countries, garment producers have been found to adopt somewhat different business models (Lane & Probert, 2004). Moreover, while an effort was made to sample across a range of contexts, some important regions, such as Sub-Saharan Africa and the Americas, fell outside the scope of this investigation. Insofar as ways of doing business vary between regions, including a wider range of countries might have provided more diversified results. Further investigation could also examine whether the business models of purely domestic SMEs differ from those of international ones. Also, the study reported here was cross-sectional. Longitudinal studies would have the potential to expose how SME international business models evolve over time and whether they, for instance, become less industry-specific as firms grow and broaden their range of experience. Finally, a more refined conceptualization and operationalization of international experience to treat it as a multi-dimensional construct (length, scope and diversity) would be a promising avenue for future research (Clarke et al., 2013).

6.3. Managerial relevance

The business model construct embodies essential elements of a firm’s characteristics and activities in a concise way. It can be used as a managerial tool to diagnose and plan different scenarios for existing businesses, including alternative innovation and foreign market entry modes. An understanding of SMEs’ international business models can identify the potential architecture of their value formation and how this can be accommodated to the context in which they do business. The business model construct can in this way both aid scientific investigation and help to inform practice (Baden-Fuller & Morgan, 2010). If we can identify the conditions under which particular business models tend to be adopted, we are in a better position to suggest recipes for managers to follow. This step forward depends on first identifying classes of business model and then accounting for differences between them – as this paper has done.

Each international business model identified in this paper represents a unique combination of firm resources, capabilities, and associated transactions fundamental to its execution. The ‘activity system’ that a firm leverages determines if its value proposition to customers can be created and delivered. For example, the development and implementation of the ambidextrous explorer model can only be achieved through innovation-driven activities and strong links to universities and research institutes. It is important for SME managers to diagnose their company resources and capabilities, to identify target customers and understand their needs, and to assess if their company product and/or service offerings can address those needs. Managers ought to consider whether extra resources and support from external network links are required to better meet the needs of target customers and how to deliver products/services to them.

While there is today considerable emphasis on the need for innovation, our findings indicate that SME decision-makers need to discriminate among the forms of innovation most likely to give them a competitive advantage in the circumstances of their industry. For smaller firms, successful strategic ‘recipes’ are likely to be industry-specific (Spender, 1989). Comparing the three industries we studied, it was clear that innovation has to be conceived in broad terms, embracing modified as well as new products, and including aesthetic criteria as in clothing design as well as technological aspects. The over-arching implication of this paper is that the notion of a context-sensitive international business model can usefully direct the attention of SME decision-makers endeavoring to enter foreign markets to the value of maintaining strategic coherence between key parameters such as innovation focus, perceived core competitive strengths and key sources of external assistance.

The encouragement of innovation-based entrepreneurship has become a widespread aim of government policy. Our findings on the positive impact of previous international business experience on the willingness of SMEs to adopt an innovation-based model for international business suggest that it is appropriate to encourage public initiatives to provide potential substitutes for that experience. These include relevant training and briefing, as well as assistance for decision-makers to have personal exposure to unfamiliar foreign markets. The general intention of such policy is to enhance their knowledge of doing business in different types of foreign market and to reduce the perceived risk (pain barrier) of entering such markets. However, given our finding that the international business models adopted by SMEs vary significantly in the light of the context-specific conditions in which they are embedded, the agencies concerned with promoting the internationalization of SMEs need to appreciate that there can be few ‘one size fits all’ solutions.

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Appendix A. Illustrations of Core Competitive Strengths

First-order theme	Second-order theme	Illustrative quotations
Statements showing what interviewees considered as their company’s core competitive strengths.	Innovation capability	Our main core competence is in drug discovery. We employ something like 65 to 70 PhDs... so it’s a very science-focused company. We have a great deal of experience in drug discovery and delivering compounds into the clinic. There are three companies that offer this type of service, but we’re the most recent entrant to the marketplace and we’ve got the most advanced technology by a mile. Technical innovation; we’ve got patents to support that, so good at producing tools.
	Flexibility	Our core strengths can be summarized in two sentences. The first one is quick and flexible feedback of services; the second one is guaranteed quality and quantity of production. We are fast...we can now design a website within 2 weeks [and] if it comes to price, we will be flexible to not lose the customer. We have our own content management systems which we have developed in house which allows us to build any type of website whether it is a small landing page to a large multinational multilanguage website...we have full flexibility with regards to what kind of components we need to use.
	Customization	What we do is we manufacture lifejackets that are first of all designed according to the requirements of the customer, so therefore we make lifejackets that are exactly what the customer wants and we brand them in his own name. We make changes according to their [customers’] requirements; we get specifications from them. Now we are supplying around 22 items to our main client in Dubai. We make samples as per their requirements and send it to them. What we felt is that there is a gap between the client needs and what is provided to an end client. They always get something which is not matching their expectations and what they paid for. We tried whether we can address those gaps.
	Speed and reliability of delivery	We are very efficient mainly in terms of delivering products on time. We will have to make the shipment based on the terms and conditions in the letter of credit. Usually they give us 3–6 months but they have to consider the shipment time as well. On-time delivery...The management is motivated to honor our contractual obligations and respect time and delivery dates. We compete through experience, efficiency, quality and compliance with and honouring deadlines.
	Supply chain management	The clothing trade is a very competitive trade, so you need your supply chain fully set up, where you can diversify quickly, where you can react to changes and act quickly... We have stockholding here of, as you can see, many garments. So we can deliver within two or three days. We tried to establish a flexible supply chain from the very beginning. Initially, we conducted three-level inventory management, which means ‘raw material-finished product-inventory’ management. Now the supply chain has improved through the management of the whole team. From 2011, we began to adapt the capacity of our supply chain. Previous, we followed the order-to-make mode (e.g. we received and arranged orders one year in advance, and then began to produce them). At 2011, we changed our production line from fixed line into flexible one. Since we have been working on flash memory products for 12 years, we build good cooperative relationships with the upstream suppliers. The relationship is a good and important resource for us.

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