What drives SME explorative-exploitative alliance formation: an integrated perspective

Ch.V.V.S.N.V. Prasad* and Rohit Prabhudesai

Department of Economics,
Birla Institute of Technology and Science, Pilani,
Goa Campus, Sancoale-Goa, 403726, India
Email: prasad@goa.bits-pilani.ac.in
Email: p2013413@goa.bits-pilani.ac.in
*Corresponding author

Abstract: Domain separation approach toward ambidexterity has received increased research attention in recent years. While SMEs can especially use the approach for obtaining competitive benefits, what drives them to form alliances across the different domains of the approach is not yet clear. The aim of this paper is to determine the drivers of SME exploration-exploitation alliance domains. The study combines the parallel perspectives on motives-antecedents of SME alliances and the domains of exploration-exploitation to provide an integrated theoretical model. Specifically, the paper aims to determine the likely conditions which cause SMEs to opt for exploration or exploitation in each of the domains. Findings indicate that a combination of motives and antecedents at all three levels – firm-level, partner-level, and environmental-level, affect the three domains of SME exploration-exploitation alliances, namely functional, structural and attribute.

Keywords: exploration-exploitation; SME; SME alliances; SME alliance formation; resource-based view; functional exploration-exploitation; structural exploration-exploitation; ambidexterity; attribute exploration-exploitation; absorptive capacity; alliance formation; social networks; entrepreneurship.


Biographical notes: Ch.V.V.S.N.V. Prasad is an Assistant Professor in Management at the Department of Economics, Birla Institute of Technology and Science (BITS), Pilani, Goa Campus. He has 18 years of experience in academics and his research interests are supply chain management, strategic management and marketing research.

Rohit Prabhudesai is a PhD Scholar in the Department of Economics at the Birla Institute of Technology and Science (BITS), Pilani, Goa Campus. He holds a Masters degree in International Business and his particular research interest is in the area of strategic alliances.
1 Introduction

Exploration-exploitation alliances provide critical resources necessary for firm’s success. Thus, firms try to seek a balance between their exploration and exploitation alliances so as to derive optimum benefits; a process referred to as ambidexterity (O’Reilly and Tushman, 2013). Traditionally, researchers believed that ambidexterity could be best achieved by using two approaches – temporal separation and organisational separation (Lavie et al., 2011; Siggelkow and Levinthal, 2003). However, Lavie and Rosenkopf (2006) found that when firms tried to achieve ambidexterity using these two approaches, it resulted in diminished performance as exploration-exploitation activities entailed opposing routines and required specialised resource allocation. They subsequently defined a new ambidexterity perspective called the domain separation approach by which firms could simultaneously explore and exploit across the various domains of its alliances, without the corresponding resource tensions associated with the other two approaches (Stettner and Lavie, 2014).

Domain separation approach toward exploration-exploitation alliances is more important for SMEs in comparison to large firms as they typically lack resources to undertake ambidexterity using the other two approaches (Su and Ren, 2014; Voss and Voss, 2013). Through the domains of exploration-exploitation alliances, SMEs can seek access to resources which they require for being successful in the short-term and long-term, but do not possess (Sun and Lo, 2014). While SMEs try to balance their exploration and exploitation activities within and between the domains so as to obtain maximum benefits, the question as to what motivates them to explore and exploit across the various domains remains unexplored. This paper seeks to determine the motives and antecedents which drive the domains of SME exploration-exploitation alliances. By undertaking this study, the authors aim to link the question of why SME alliances are formed (domain of motives and antecedents) to what type of SME alliances are formed (domain of exploration-exploitation).

The paper proceeds in the following manner. Firstly, methodology behind selection of the papers for literature review and their analysis is presented. The various motives and antecedents identified in the literature as the drivers of SME alliance formation are then discussed. Subsequently, the literature on exploration-exploitation alliances is analysed. Identified motives and antecedents from the literature review are then linked to each of the three domains of SME exploration-exploitation alliances. In doing so, propositions are developed for each domain, determining how the presence of certain motives and antecedents affects specific domains of exploration-exploitation. Based on these propositions, a conceptual model is developed. Finally, the implications and limitations of this study are discussed.

2 Methodology

To identify the pertinent articles for this study, authors used EBSCO and ABI/Inform complete databases as both provide a comprehensive coverage of articles and have been prominently used in earlier conceptual studies in the strategic alliance field (e.g., Christoffersen, 2013; Christoffersen et al., 2014; Niesten and Jolink, 2015; Wassmer, 2008). Both databases allow search process to be limited to peer-reviewed journals and
books written in English – which was the criterion for selection of articles. Keywords relating to research questions were searched in both databases, with a time limit stretching from 1985 till 2016. 1985 was chosen as the starting point as alliance formation literature was found to have attracted specific attention from that year onwards (e.g. Harrigan, 1985; James, 1985; Williamson, 1985). To make the process more rigorous, relevant articles from the reference section of the identified articles were also included, as long as they satisfied the inclusion criterion.

In the extant literature on SME alliance formation, the domains of exploration-exploitation have not been explicitly studied in relation to motives and antecedents. Thus, the authors adopted a two-stage approach to derive systematic inputs on this process. In the first stage, authors analysed the literature pertaining to the domain of antecedents and motives to determine what causes SMEs to form alliances. A table was made to list the identified motives and antecedents (see Table 1). This was essential as it enabled the authors to understand the specific rationales behind alliance formation process of SMEs. In the second stage, authors clearly defined the different domains of exploration-exploitation alliances. Based on the understanding of antecedents and motives of SME alliances as well as the domains of exploration-exploitation, authors could derive linkages between the former and latter constructs for forming the theoretical model.

### 3 Literature review

#### 3.1 Theories on SME alliance formation

Alliance formation literature can be divided into two halves – motives of alliance formation and antecedents affecting alliance formation. Motives determine the firm-specific need for forming an alliance, while antecedents cause firms to exhibit higher or lower alliance formation rates (Gulati, 1999; Wood et al., 2009). Based on the review conducted by the authors, motives and antecedents of SME alliance formation identified in the extant literature were first determined. These perspectives were arranged into three categories, firm-level, partner-level and environmental-level, in accordance with the classification in prior studies such as Street and Cameron (2007) and Van Gils and Zwart (2009). The results of the review are categorised in Table 1. Using the understanding on these categorised perspectives, the paper tries to determine how they influence the domains of SME exploration-exploitation alliances. In the following section, literature on exploration-exploitation is reviewed, based on which the relevant hypotheses and conceptual model are developed.

**Table 1** Motives and antecedents of SME alliance formation

<table>
<thead>
<tr>
<th>Type</th>
<th>Motives and antecedents</th>
<th>Papers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm-level</td>
<td>Alliance experience</td>
<td>Lohrke et al. (2006)</td>
</tr>
<tr>
<td></td>
<td>Absorptive capacity</td>
<td>De Jong and Freel (2010); Yoon et al. (2015)</td>
</tr>
<tr>
<td></td>
<td>Entrepreneurial orientation</td>
<td>Dickson and Weaver (1997); Eisenhardt and Schoonhoven (1996); Franco and Haase (2013); Marino et al. (2008); Zhao (2014)</td>
</tr>
<tr>
<td></td>
<td>Innovation output</td>
<td>Colombo et al. (2006); Shan et al. (1994)</td>
</tr>
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</table>
Motives and antecedents of SME alliance formation (continued)

<table>
<thead>
<tr>
<th>Type</th>
<th>Motives and antecedents</th>
<th>Papers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm size</td>
<td>Almeida et al. (2003); Blind and Mangelsdorf (2013); Colombo et al. (2006); Eisenhardt and Schoonhoven (1996); Gomes-Casseres (1997); Narula (2004); Shan et al. (1994)</td>
<td></td>
</tr>
<tr>
<td>Firm status</td>
<td>Kim and Higgins (2007); Pollock and Gulati (2007)</td>
<td></td>
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<tr>
<td>Firm performance</td>
<td>Lohrke et al. (2006)</td>
<td></td>
</tr>
<tr>
<td>Resource level</td>
<td>Eisenhardt and Schoonhoven (1996); Diestre and Rajagopalan (2012); Franco and Haase (2013); Park et al. (2002); Santamaria et al. (2009); Zhao (2014)</td>
<td></td>
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<tr>
<td>Venture capital/corporate venture capital</td>
<td>Colombo et al. (2006); Ozmel et al. (2013); Wang et al. (2012)</td>
<td></td>
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<tr>
<td>Partner-level</td>
<td>Alliance network</td>
<td>Baum et al. (2000); Freeman et al. (2006)</td>
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<tr>
<td>Executives network</td>
<td>BarNir and Smith (2002); Covielo and Munro (1997); Eisenhardt and Schoonhoven (1996); Kim and Higgins (2007)</td>
<td></td>
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<tr>
<td>Trust</td>
<td>Brunetto and Farr-Wharton (2007); Mukherjee et al. (2013)</td>
<td></td>
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<tr>
<td>Environmental-level</td>
<td>Environmental munificence</td>
<td>Dickson and Weaver (2011)</td>
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<tr>
<td>Environmental</td>
<td>Dickson and Weaver (1997); Dickson and Weaver (2011); Gnyawali and Park (2009); Marino et al. (2008); Mukherjee et al. (2013); Steensma et al. (2000); Wang et al. (2012)</td>
<td>Dickson and Weaver (1997); Dickson and Weaver (2011); Gnyawali and Park (2009); Marino et al. (2008); Mukherjee et al. (2013); Steensma et al. (2000); Wang et al. (2012)</td>
</tr>
<tr>
<td>Market stage</td>
<td>Eisenhardt and Schoonhoven (1996); Park et al. (2002)</td>
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3.2 Exploration-exploitation

The definition of exploration-exploitation concept was provided by March (1991, p.71) in a seminal paper on organisational learning, wherein it was propounded that “exploration includes things captured by terms such as search, variation, risk taking, experimentation, play, flexibility, discovery, innovation. Exploitation includes such things as refinement, choice, production, efficiency, selection, implementation, execution”. Subsequently, the description of exploration was refined to only include firm activities which generated new knowledge while exploitation included activities that increased scale and efficiency in an organisation (Lane and Lubatkin, 1998; Levinthal and March, 1993). Recent research regards exploration as any activity in which new knowledge is generated and exploitation as the application of already existing knowledge (He and Wong, 2004; Lavie and Rosenkopf, 2006; Vermeulen and Barkema, 2001).

While the concept of exploration-exploitation in organisations was initially limited to firm level analysis, Koza and Lewin (1998) applied it at a dyadic level by trying to determine how exploration and exploitation activities were undertaken by partnering
firms. Further studies by Lavie et al. (2010), Rothaermel (2001), and Rothaermel and Deeds (2004) deepened the link between alliances and exploitation-exploration domain by contending that firms try to achieve a balance between their exploration and exploitation alliances. However, since both activities require contrasting routines, they are fundamentally incompatible and compete for limited firm resources (March, 1991; Kuittinen et al., 2013). Gupta et al. (2006) state that scarcer the resources possessed by a firm, more likely it is that it will either pursue exploration or exploitation due to their conflicting routines. Thus, firms such as SMEs which possess limited resources find it difficult to explore and exploit at the same time (Hong et al., 2016). Subsequently, Lavie and Rosenkopf (2006) provided the domain separation approach of exploration-exploitation, wherein firms could simultaneously explore and exploit across three distinct domains of their alliances – functional, structural or attribute, without the associated resource constraints. Though the domain separation approach is critical for SMEs due to the opportunity it provides to achieve ambidexterity without creating resource tensions, the question as to what specific conditions favour the formation of SME alliances across these three domains remains unexplored. In the next section, the underlying motives and antecedents behind each domain of SME exploration-exploitation alliances are analysed.

4 Hypotheses development

4.1 When do firms form functional exploration-exploitation alliances?

Functional domain refers to the value-chain aspect of alliance formation (Koza and Lewin, 1998; Lin et al., 2007; Rothaermel, 2001; Rothaermel and Deeds, 2004; Yang et al., 2014). If the firm enters into an alliance to exploit its existing competencies and technologies, it is referred to as an exploitation alliance while if it intends to develop new capabilities through an alliance, it is referred to as an exploration alliance (Lavie and Rosenkopf, 2006).

According to resource-based theory (RBT), a firm can obtain competitive advantage over its rivals by having valuable resources that are scarce, non-imitable and non-substitutable. Grant (1991) categorises these resources necessary for firm competitiveness into five categories – financial, physical, technological, human and organisational. While such resources are critical for a firm, due to their imperfect mobility, they cannot be readily acquired. Strategic alliances represent a means for a firm to access other firms’ resources. By combining these complementary resources with their own resources, firms can gain a competitive advantage (Das and Teng, 2000). Resource acquisition by forming strategic alliances is especially essential for SMEs as they often do not possess the resources necessary for competing in the marketplace, unlike large firms (Franco and Haase, 2013). SMEs can thus undertake alliance formation for obtaining these resources. Thus, viewed from this perspective, an alliance formed by an SME to explore new opportunities and develop new knowledge; by combining complementary resources is called an explorative alliance, while that in which complementary resources are used to exploit existing competencies is an exploitative alliance. Forms such as joint R&D are exploratory alliance activities while activities such as licensing and joint marketing are of the exploitative typology (Rothaermel, 2001).
However, as strategic alliances involve commensurate resource contributions from partners, SMEs also need to provide resources to their partners in order to access their resources. Thus, SMEs possessing valuable resources, which are resources that can be useful to potential partners, will exhibit a greater tendency to form alliances (Zhao, 2014). Thus, it can be hypothesised that:

**Hypothesis 1a** Greater the valuable resources possessed by an SME, greater will be the SME functional exploration alliance formation tendency.

**Hypothesis 1b** Greater the valuable resources possessed by an SME, greater will be the SME functional exploitation alliance formation tendency.

Even though a firm may possess necessary resources to form an alliance, environmental uncertainty affects its decision to form alliances. Milliken (1987) defines environmental uncertainty as the inability of the managers of a firm to accurately assess the future changes that may occur in the external environment faced by the firm. SMEs possessing valuable resources, tackle environmental uncertainty by using alliances as a strategy, due to the presence of such resources as financial, as opposed to firms which do not possess such resources (Dickson and Weaver, 1997; Mukherjee et al., 2013). In high-growth markets, SMEs tend to form exploration alliances while in low-growth markets they are likely to form exploitation alliances (De Mattos et al., 2013; Yamakawa et al., 2011). Park et al. (2002) find that small firms possessing valuable resources form exploration alliances in growing or declining markets by deploying their resources in order to combat the market uncertainty while exploitation alliances are formed in stable environments, to take immediate advantage of the existing resources. Thus, SMEs possessing valuable resources will favour explorative alliance formation in an uncertain environment while a reverse trend will be visible in a stable environment.

**Hypothesis 2a** Environmental uncertainty will positively moderate the tendency of SMEs possessing valuable resources to form functional exploration alliances.

**Hypothesis 2b** Environmental uncertainty will negatively moderate the tendency of SMEs possessing valuable resources to form functional exploitation alliances.

### 4.2 When do firms form structural exploration-exploitation alliances?

Structural domain is related to the network characteristics of the firm. While firms may have the required resources and capabilities, they will only form alliances when they are aware of the existence of partners with the necessary profile (Balakrishnan and Koza, 1993). The decision to form alliances thus, is contingent upon the network of a firm, formed by the connections a firm has with other firms. A firm can be directly connected to another firm through prior alliance relationships it has had with it, or it can be indirectly connected to it through a prior alliance partner. If a firm enters into an alliance relationship with another firm with which it has formed prior alliance, it is a form of structural exploitation as the firm is aiming to exploit the built social capital, while forming an alliance with a new firm is a form of structural exploration (Beckman et al., 2004).
While large firms typically possess a large pool of suppliers and buyers through the direct and indirect ties they possess, which reduces their search cost for alliance formation, SMEs tend to find it difficult to identify suitable partners for alliance formation due to their smaller social capital in comparison (Aarstad et al., 2010; Gulati and Gargiulo, 1999). However, since SMEs are generally extensions of the executives in charge, they compensate by relying on the executives’ social network for establishing alliances with suitable partners (Dickson and Weaver, 2011). Firstly, SME executives who have social ties with multiple organisations and individuals are better informed of the opportunities for alliance formation. These ties can be developed through previous work experience of the executives as well as via memberships with professional and voluntary organisations (BarNir and Smith, 2002; Eisenhardt and Schoonhoven, 1996; Street and Cameron, 2007). Such personal ties of the executives help them to identify suitable opportunities for alliance formation. Similarly, the extent to which they participate in networking activities, by attending trade fairs, meetings of business and social organisations etc., also ensures greater contacts at individual level, apprising them of the potential collaborative activities, which positively influences their firm-level decision making pool (Kim and Higgins, 2007). Thus, it can be posited that:

Hypothesis 3a Greater the number of social ties SME executives have, greater will be the SME structural exploration alliance formation tendency.

Hypothesis 3b Greater the number of social ties SME executives have, greater will be the SME structural exploitation alliance formation tendency.

Hypothesis 4a Greater the extent to which SME executives participate in networking activities, greater will be the SME structural exploration alliance formation tendency.

Hypothesis 4b Greater the extent to which SME executives participate in networking activities, greater will be the SME structural exploitation alliance formation tendency.

Entrepreneurial firms, defined as firms with high orientation toward pro-activeness, innovation and risk-taking behaviour, use networks to determine the opportunities which exist in the external environment (Hoang and Antoncic, 2003; Jack, 2010). When relational ties exist with other firms, networks provide key resources and information to entrepreneurial firms (Dershin, 2010; Hayter, 2013). Oparaoha (2015) finds that the institutional networks of an SME determine the entrepreneurial activities in foreign markets. Networks provide entrepreneurial SMEs with access to exploration and exploitation resources, which are crucial for their survival given their size constraints and tendency to remain ahead of competition (Partanen et al., 2008; Walker et al., 1997; Yli-Renko et al., 2001). From a partner perspective, SMEs with an entrepreneurial posture are more attractive alliance partners than other firms, as they can provide greater knowledge benefits (Baum et al., 2000; Franco and Haase, 2013). Thus, SMEs with a higher entrepreneurial orientation will exhibit greater tendency to form structural exploration and exploitation alliances.

Hypotheses 5a Higher the entrepreneurial orientation of an SME, greater will be the SME structural exploration alliance formation tendency.
Hypotheses 5b Higher the entrepreneurial orientation of an SME, greater will be the SME structural exploitation alliance formation tendency.

From the transaction-cost theory perspective, environmental uncertainty generates transactional risk (Williamson, 1985). Firms cautiously choose their alliance partners and enforce complex contracts so as to negotiate this uncertainty (Anderson and Dekker, 2005). SMEs typically face more uncertainty in their alliance relationships in comparison to large firms as they are at a greater risk of partner opportunism. Thus, while SMEs need resources to combat the uncertain environment they face, they must make a choice between exploring new partners and forming alliances with prior partners. When faced with an uncertain external environment, motivation of an SME to form alliances will be positively moderated by its entrepreneurial orientation (Dickson and Weaver, 1997). SMEs with higher entrepreneurial orientation typically frame risky and uncertain situations in a positive manner due to the opportunities they sense in such environments, as compared to those with lower entrepreneurial orientations (Palich and Bagby, 1995). As SMEs with higher entrepreneurial orientation tend to explore opportunities in an uncertain environment (Dickson and Weaver, 1997), the tendency to form structural exploration alliances in an uncertain environment will increase when SMEs possess a higher entrepreneurial orientation, while the tendency to form structural exploitation alliances will be negatively related to the perceived environmental uncertainty faced by the SME.

Hypotheses 6a Environmental uncertainty will positively moderate the relationship between entrepreneurial orientation of an SME and its tendency to form structural exploration alliances.

Hypotheses 6b Environmental uncertainty will negatively moderate the relationship between entrepreneurial orientation of an SME and its tendency to form structural exploitation alliances.

Opportunistic behaviour by partner can cause SMEs to lose their competitive advantage. Thus, SMEs choose partners cautiously and trust in a prior alliance partner acts as a moderating variable in SME executives’ perception of potential benefits (Gaur et al., 2011). Mukherjee et al. (2013) find that trust forms an important determinant for SME alliance formation with prior partners as it alleviates the appropriation concerns. Thus, even though an SME may have a high entrepreneurial orientation, alliance formation decision with prior partners will be contingent on the level of trust it has in that partner.

Hypothesis 7 Trust will positively moderate the relationship between entrepreneurial orientation of an SME and its tendency to form structural exploitation alliances.

4.3 When do firms form attribute exploration-exploitation alliances?

When a firm forms alliances with partners having similar attributes, it constitutes attribute exploitation while if the firm forms alliances with varied partners, it refers to attribute exploration. Attribute exploitation assists a firm in reducing ambiguity and building alliance management capabilities. Attribute exploration on the contrary, helps a firm to assimilate diverse knowledge emanating from partners with different attributes and skills (Lavie and Rosenkopf, 2006).
What drives SME explorative-exploitative alliance formation

Viewed from another perspective, attribute exploration-exploitation domain encompasses the alliance portfolio diversity of a firm. Alliance portfolio of a focal firm comprises of the bilateral alliances maintained by it (Hoffmann, 2007). Wassmer (2008) classifies alliance portfolio complexity based on size, structural, relational and partner components. As per the definition given by Lavie and Rosenkopf (2006) and March (1991) of attribute exploration-exploitation, only partner-specific component of alliance portfolio complexity is considered in this study.

An alliance portfolio of partners with varied attributes (exploration) provides a firm with diverse resources and skills (Burgers et al., 1993). However, transaction-cost theory states that increased diversity is likely to lead to increased coordination costs associated with managing such an alliance portfolio (Williamson, 1985). Also, since diverse partners will exist well beyond the knowledge sphere of focal firms, significant search cost is incurred while partner-selection errors will prove costly for the firm (Goerzen and Beamish, 2003). SMEs are likely to face these constraints more so owing to their size and resource constraints in comparison to large firms (Flatten et al., 2011).

SMEs with a high entrepreneurial orientation typically view such uncertainties as opportunities to gain diverse benefits while conservative SMEs find their environment increasingly uncertain and may stick to tested strategic choices (Marino et al., 2008; Palich and Bagby, 1995). Duysters and Lokshin (2011) find that alliance portfolios of innovative firms are more expansive in terms of size and diversity as compared to imitator firms. Marino et al. (2002) apply this assertion to SMEs and state that each dimension of entrepreneurship is correlated with alliance portfolio diversity. An entrepreneurial SME will form a diverse alliance portfolio as it provides the necessary resources (Baum et al., 2000), reputation (Stuart, 1998) and market information (Ozcan and Eisenhardt, 2009) needed for competing in the market. SMEs with a higher entrepreneurial orientation are more likely to exhibit partner attribute portfolio diversity (Ramachandran and Ramnarayan, 1993; Shan et al., 1994).

Wassmer (2008) and Lavie and Rosenkopf (2006) define partner alliance portfolio diversity in terms of size and industry. Entrepreneurial SMEs are more likely to form alliances with partners of diverse sizes due to their risk-taking orientation and innovative reputation, which makes them an attractive alliance partner (Alvarez and Barney, 2005; Franco and Haase, 2013; Larson, 1992; Stuart, 2000). Partners from different industries offer diverse resources and learning advantages but increase the alliance management complexity (Jiang et al., 2010; Srivastava and Gnyawali, 2011; Yoon et al., 2015). SMEs with higher entrepreneurial orientation will need such resources and are more likely to form alliances with partners from different industries (Audretsch and Feldman, 2003; Van Gils and Zwart, 2004).

Hypothesis 8a SMEs with higher entrepreneurial orientation are more likely to form alliances with partners of different sizes (attribute exploration).

Hypothesis 8b SMEs with higher entrepreneurial orientation are more likely to form alliances with partners from different industries (attribute exploration).

Hypothesis 9a SMEs with lower entrepreneurial orientation are more likely to form alliances with partners of similar sizes (attribute exploitation).

Hypothesis 9b SMEs with lower entrepreneurial orientation are more likely to form alliances with partners from similar industries (attribute exploitation).
As discussed earlier, environmental uncertainty generates transaction risks in an SME alliance relationship. Since SMEs need resources to counter the threat posed by an uncertain external environment, they may choose to be innovative and explore different partners to learn additional partner-specific skills or they may want to reduce uncertainty by choosing partners with similar skills (Koza and Lewin, 1998). As entrepreneurial SMEs need greater amount of resources and frame risky situations in positive light (Marino et al., 2008; Piperopoulos, 2007), their tendency to explore diverse alliance partners will be higher when the perceived environmental uncertainty will be higher.

Hypothesis 10a Perceived environmental uncertainty will positively moderate the relationship between entrepreneurial orientation of an SME and its attribute exploration domain.

Hypothesis 10b Perceived environmental uncertainty will negatively moderate the relationship between entrepreneurial orientation of an SME and its attribute exploitation domain.

The extent to which a firm exhibits partner portfolio diversity is contingent upon its capability to assess, assimilate and exploit the external knowledge it will obtain from an alliance. This internal capability of the firm is termed as its absorptive capacity (Cohen and Levinthal, 1990; Zahra and George, 2002). While SMEs with lower entrepreneurial orientation typically tend to exploit in terms of partner portfolio diversity due to their narrow absorptive capacity, those with higher entrepreneurial orientation continuously try to seek new alliance opportunities and have formal mechanisms in place for internal dissemination and exploitation of the acquired knowledge (Flatten et al., 2011; Wales et al., 2013). Thus, it can be posited that:

Hypothesis 11a Absorptive capacity of an SME will positively moderate the relationship between its entrepreneurial orientation and attribute exploration domain.

Hypothesis 11b Absorptive capacity of an SME will negatively moderate the relationship between its entrepreneurial orientation and attribute exploitation domain.

5 Discussion

While extant research has indicated that SMEs can explore and exploit across the various domains of its alliances (Lavie and Rosenkopf, 2006), this paper provides insights on the drivers of this domain separation approach toward ambidexterity for SMEs. The study identifies certain firm-level, partner-level and environmental-level antecedents and motives (from those listed in Table 1) of the SME exploration-exploitation alliance domains.
The conceptual model in Figure 1 figuratively explains the set of relationships between the SME motives-antecedents and exploration-exploitation domains, provided in the previous section. Of the perspectives listed in Table 1, three firm-level antecedents and motives-resource characteristics, entrepreneurial orientation and the network characteristics, act as precursors to the domains of SME exploration-exploitation alliances. While large firms are driven by multiple antecedents and motives for their exploration-exploitation activities, the three perspectives have idiosyncratic importance for SMEs. Their unique endowments enable SMEs to explore and exploit across the different domains. Similarly, due to unique size and resource constraints SMEs face, certain other antecedents and motives moderate their exploration and exploitation activities in the three domains.

The functional exploration-exploitation alliance domain is contingent upon the resource characteristics of an SME. In contrast to large firms, SMEs often do not possess the resources necessary for functioning in the marketplace. To obtain these resources, they may form exploration-exploitation alliances as risks and costs can be adequately shared. However, due to the need for contributing resources in order to form an alliance, SMEs possessing valuable resources, which can be of use to potential partner firms, will
exhibit greater tendency to form exploration and exploitation alliances. Similarly, an uncertain external environment poses existential challenges for SMEs, whereby those which possess valuable resources will tend to use them in order to form functional exploration alliances. By forming such alliances, SMEs can develop new knowledge necessary for ensuring firm’s long-term success in an uncertain environment. However, in a stable environment, an SME does not face any existential threats; there is less need for undertaking risky and long-term oriented ventures, thereby it will tend to focus on short-term profits by forming functional exploitation alliances (Park et al., 2002).

The structural exploration-exploitation domain of SME alliances, which measures the extent to which an SME forms alliances with prior as well as new partners, is contingent upon its network characteristics and entrepreneurial orientation. SMEs lack the social capital possessed by large firms, whereby search for alliance partners with requisite characteristics is hindered. To form alliances, SMEs compensate by using the social network of their executives. While large firms also benefit from the social capital of their executives and board members for formation of alliances, they have a large organisational capital formed by network of buyers and suppliers, on which they majorly rely for searching alliance partners with required capabilities. For an SME however, the social ties its executives possess, through their previous work experience and memberships of organisations, as well as the frequency with which they participate in networking activities such as trade fairs, conferences etc will determine the extent to which it forms structural exploration and exploitation alliances. Through such networking tendencies of its executives, SMEs will be aware of the partners with necessary skills (Baum et al., 2000; Kim and Higgins, 2007). While the social capital of executives helps to identify potential partners and thus form alliances, entrepreneurial orientation of an SME is also a key resource for SMEs in their decision to form alliances. SMEs with higher entrepreneurial orientation require resources from diverse partners, new as well as old, and will tend to form more structurally explorative and exploitative alliances in comparison to those with lower entrepreneurial orientation. However, since SMEs possess limited information processing capability when faced with an uncertain environment, those with a lower entrepreneurial orientation will exhibit a tendency to form alliances with prior partners due to their risk-averse posture while those with higher entrepreneurial orientation will explore new partners in an uncertain environment. In a similar vein, SMEs are at the risk of opportunistic behaviour from their partners in alliances, a concern not so much experienced by large firms due to their size and resource advantage. Thus, even though an SME may have a higher entrepreneurial orientation, the trust it possesses in a prior partner will determine its subsequent alliance formation with that partner.

SMEs with a higher entrepreneurial orientation, being more risk-taking and needing larger resource pool for their strategic needs, will form alliances with partners of different sizes and diverse industries, a perspective termed as attribute exploration alliance. Conservative SMEs on the other hand tend to get stuck in competency traps due to their risk-averse orientation and tend to form attribute exploitation alliances, characterised by size and industry homophily. However, uncertain environment makes it difficult for SMEs to form alliances with partners having diverse attributes due to the inherent risk of failure associated with newness in such exploration. As entrepreneurial SMEs are more risk-oriented, they will tend to explore more in such uncertain environments to acquire more resources while those with a lower entrepreneurial orientation will tend to exploit (Marino et al., 2002). While entrepreneurial orientation determines the extent to which
SMEs explore and exploit, exploring with partners of diverse attributes also involves great adaptation as they provide variety of knowledge which may be difficult for SMEs to assimilate and exploit due to the limited capacity they have for absorbing and disseminating the knowledge internally. Thus, SMEs which have mechanisms for absorbing and disseminating such knowledge will tend to show greater tendency toward forming attribute exploration alliances.

6 Conclusions

Extant literature has widely acknowledged the differences in SME and large firms’ alliance formation patterns. While large firms can strike a balance across their exploration and exploitation alliances using multiple approaches, domain separation approach provides salience for SMEs due to the resource constraints they face. Using the approach, SMEs can explore and exploit simultaneously across the three domains – functional, structural and attribute, in order to derive a competitive advantage. However, the question as to what drives the exploration and exploitation activities of SMEs in these three domains remains unanswered. This paper contributes to the extant literature as it is the first of its kind theoretical study which provides insights on the domains of SME exploration-exploitation alliances, examined through the lens of antecedents and motives. From the perspective of the domains, while earlier studies have examined the drivers of only a single domain of SME exploration-exploitation alliances (e.g. Rothaermel, 2001; Park et al., 2002), this paper provides integrated insights on all three domains of SME exploration-exploitation alliances. On the antecedents and motives, it builds on the work of researchers such as Lavie et al. (2010) who have listed various antecedents and motives of exploration-exploitation alliance domains, by systematically integrating various other drivers which are idiosyncratic for SMEs in order to provide a conceptual model for explaining their exploration-exploitation across the domains. The study provides important practical and theoretical implications, discussed in the next section.

6.1 Implications

The study provides important contribution toward understanding the domain separation approach adopted by SMEs for achieving ambidexterity. From a practical perspective, the study can help SME managers to determine how their firms can achieve ambidexterity using domain separation approach. The antecedents and motives derived in this study are SME-specific, whereby specific attention can be paid to them in order to enhance an SME’s efforts to derive a competitive advantage. The paper provides an integrated perspective of the SME domain separation approach, so practitioners can better understand the interplay of drivers leading to exploration-exploitation.

From a theoretical perspective, the study provides novel insights on the process of ambidexterity of SMEs. The domain separation approach toward ambidexterity from an SME perspective has received little attention in extant research and the study provides an integrated model which researchers can use to determine how SMEs can achieve ambidexterity using the domain separation approach. While the model only provides a preliminary and exploratory answer, it nonetheless builds the groundwork for future researchers to provide insights on ambidexterity of SMEs.
6.2 Limitations and scope for further research

This paper is built on the assumption provided by Lavie and Rosenkopf (2006) in their seminal paper that firms tend to balance their exploration-exploitation activities within and between the domains over the course of time. Its focus is limited to the conditions which drive exploration and exploitation in each of the SME alliance domains. However, due to this approach, the paper perhaps ignores the influence of one activity over the other. SMEs may undertake exploration within a domain, which may subsequently give rise to exploitation or vice versa, due to the strategic needs. Future research could perhaps determine how undertaking one activity influences the other activity within and between the domains of SME alliances so that a balance is achieved.

Similarly, the paper does not focus on the self-reinforcing behaviour of SMEs. Extant research indicates that both activities of exploration and exploitation are path-dependent (Lavie et al., 2010) and it is especially the case for SMEs which tend to rely on tried and tested routines. Formation of prior exploration or exploitation alliances in each domain may also influence SMEs’ strategic choice. Research in future can also provide insights in this area.

Lastly, while the paper provides multiple antecedents and motives which could influence the domains of SME exploration-exploitation alliances; researchers could determine more antecedents and motives which drive this process. The influence of environmental antecedents such as cultural variables on the tendency of SMEs to explore and exploit across the different domains needs to be given attention. Future research could also perhaps identify industry-specific determinants of the domains of SME exploration-exploitation alliances. Research on exploration-exploitation alliances of SMEs has been undertaken in the context of specific industries such as semiconductors (Park et al., 2002) and biotechnology (Rothaermel, 2001; Rothaermel and Deeds, 2004), so it would be worth exploring how different motives and antecedents influence this decision in different industries.

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References


What drives SME explorative-exploitative alliance formation


What drives SME explorative-exploitative alliance formation


Notes

Keywords used for identifying antecedents and motives were alliance, alliance formation, strategic alliance, strategic alliance formation, SME alliance formation, SME strategic alliance formation while those for exploration-exploitation were exploration, exploitation, exploration and exploitation, ambidexterity, SME exploration, SME exploitation, SME exploration and exploitation, SME ambidexterity.