

The final version of this article has now been published:

Haskell, N., Veilleux, S. et D. Béliveau (2015) « Functional and Contextual Dimensions of INVs' Alliance Partner Selection », *Journal of International Entrepreneurship*, 14 (4) : 483-512.

Functional and Contextual Dimensions of INVs' Alliance Partner Selection¹**Abstract**

Prior research on the selection of international alliance partners calls for investigation of the potential specificity of selection criteria for evaluating partners for alliances with different objectives or functions. The present study responds to this need and contributes to the development of the field of international entrepreneurship by examining the relation between the alliance function and the criteria chosen. We studied three alliance functions: R&D, production, and marketing. Second, for each alliance function, we analyzed the criteria selected within two contexts: developing countries and those that consider emerging markets in their partner choice set. Data were collected through semi-structured interviews with 25 executives from INVs in two major North American biotechnology clusters, representing 239 alliances. 65.7% of these were signed with international partners. Results indicate that, aside from compatibility/complementarity of resources (R&D and production alliances), all criteria used within a single function are unique to that function. Furthermore, these criteria differ somewhat when the potential partners considered by a firm include those from both emerging and developed markets, compared to firms that limit potential partners to those in developed markets contexts. Finally, the study reveals that respondent firms integrate country, industry, and market attractiveness factors with partner selection criteria for marketing alliances. This suggests that, for many firms, market choice and partner selection are not successive steps. The study's originality lies in its focus on the relationship between alliance function and partner selection criteria used by INVs as well as within different contexts.

Keywords: partner selection, alliance, emerging markets, developed countries, biotechnology, selection criteria, alliance function

French Abstract

Des études précédentes portant sur la sélection des partenaires pour des alliances internationales soulèvent le besoin d'examiner la spécificité des critères de sélection dans l'évaluation des partenaires pour des fonctions différentes. Cet article répond à ce besoin et contribue au développement du domaine de l'entrepreneuriat international en analysant la relation entre l'objectif et les critères choisis pour trois types d'alliances : recherche et développement, production et marketing. Pour chaque fonction, les critères sont aussi analysés dans deux contextes : les entreprises qui limitent leurs partenaires à des pays développés et celles qui considèrent les pays en émergence. Des entrevues semi-structurées ont été réalisées auprès de 25 dirigeants de nouvelles entreprises internationales en biotechnologie de Montréal et de Boston, totalisant 239 alliances, dont 157 internationales. Les résultats indiquent que, mis à part la complémentarité et la compatibilité, tous les critères utilisés à l'intérieur d'une fonction lui sont spécifiques. Les critères peuvent diverger lorsque les partenaires potentiels proviennent de marchés émergents en plus de marchés développés. Pour les alliances marketing, les entreprises répondantes prennent en compte, en sus des

¹ We would like to thank Professor Hamid Etemad for his editorial advice, as well as anonymous JIEN reviewers for their comments on earlier drafts of this article. Support for this research was generously provided by the Social Sciences and Humanities Research Council of Canada.

critères de sélection reliés au partenaire, l'attractivité du pays, de l'industrie et du marché. Pour plusieurs entreprises, le choix du marché et la sélection du partenaire ne constitueraient pas des étapes successives. L'originalité de cette recherche repose sur le fait qu'elle se concentre sur la relation entre la fonction de l'alliance et les critères de sélection utilisés par les entreprises, qui pourront aussi varier selon le contexte.

Mots clés: Sélection de partenaires, alliance, marchés en émergence, pays développés, biotechnologie, critères de sélection, fonction de l'alliance

Summary Highlights

Contribution: Using data from 25 international new ventures (INVs), representing 157 alliances with international partners, this study contributes to the development of the field of international entrepreneurship by underlining the specificity of alliance partner selection criteria used by high technology INVs when selecting international partners for different functions and from different economic contexts.

Purpose/Research Question: What are the potential differences in selection criteria used to choose an alliance partner according to the function (objective) of the proposed alliance (R&D, production, or marketing)? Are there differences in selection criteria that managers in developed countries use when selecting potential partners operating within different economic contexts (i.e., developed countries, emerging markets)?

Findings/Results: Results indicate that, aside from compatibility and complementarity of resources, all selection criteria are specific to a particular alliance function (R&D, production, or marketing). Many selection criteria suggested by previous research, where function was not considered, are found to be specific to one function, suggesting the importance of including alliance function in future research. Furthermore, some criteria may differ when potential partners considered by INVs include those from both developed and emerging and markets, compared to firms that limit potential partners to those from developed markets contexts. Individually, INVs use very few selection criteria when choosing their alliance partners.

Limitations: Due to their dependence on alliances, our samples were drawn from two North American human health biotechnology clusters. This sector may not be representative of other industries due to particular constraints and needs. Small sample size also limits the ability to extrapolate results.

Theoretical Implications and Recommendations: Results support the proposition that many selection criteria are function specific. While about half of the criteria suggested by the reference theories and the empirical literature, when alliance function is not taken into account, were mentioned by respondents, this study found that 9 selection criteria are unique to R&D, 5 are unique to production, and 13 are unique to marketing alliances. As a consequence, future research should distinguish the function (objective pursued) of the planned partnership. In addition, the level of economic development of potential partners' countries may be an important dimension to consider in future research. It was observed that respondent firms integrate country, industry, and market attractiveness measures with partner selection criteria, suggesting that, for many INVs, market choice and partner selection are not successive steps a suggested in normative literature.

Practical Implications and Recommendations: The use of a limited number of selection criteria, or relying on criteria that do not relate directly to the function, the context, the compatibility and the complementarity of resources may lead to suboptimal partner choice, unprofitable investment, and strategic delays in international development. Especially for marketing alliances, managers are advised to examine

their current method of evaluating potential partners and to ensure inclusion of strategic, partner-related and task-related measures. More specifically, country, industry, and market attractiveness analysis should be conducted independently prior to the evaluation and selection of alliance partners. Furthermore, partner evaluation and selection should focus on a greater variety of criteria directly related to the potential success of the alliance from an organizational perspective.

Functional and Contextual Dimensions of INVs' Alliance Partner Selection

1. INTRODUCTION

The past few decades have witnessed a significant increase in the number of cross-border strategic alliances among firms (Sivakumar et al. 2011). Globalization, economic shifts created by maturing economies and emerging markets, and the financial crisis of 2008 have affected a wide range of industries. While establishing strategic alliances with international partners represents an important and necessary development strategy in many sectors to successfully participate in worldwide opportunities, their success is not guaranteed. Indeed, partner selection is critical (Koot 1988), but little is known about how Western firms select their alliance partners in culturally different and sometimes very distant markets (Cyrino et al. 2010). Some research has been done on partner selection criteria in emerging markets (Hitt et al. 2004; Hitt et al. 2000; Sexton 1997). However, no research has delved into the moderating effects of the functional objectives of alliances or the possible impact of the economic context of international partners on alliance partner selection criteria.

The objective of the present study is, therefore, to promote a better understanding of how functional and contextual dimensions affect partner selection criteria. Specifically, it will examine (a) the potential differences in evaluation criteria used to choose a partner according to the function (objective) of the proposed alliance (R&D, production, or marketing) and (b) explore the potential differences in criteria that developed country managers use when selecting potential partners operating within different economic contexts (i.e., developed countries and emerging markets). The study will focus on high technology INVs, which are known for their need of partnerships to develop, manufacture and/or commercialize their products in global markets.

To achieve this objective, the literature related to international strategic alliances and international entrepreneurship, emerging markets, and alliance partner selection is examined. The propositions are studied within the context of SMEs and, more specifically, INVs in the biotechnology industry. This sector has been chosen based on recommendations by previous authors (Melen and Rovira Nordman 2009; Sandberg 2013). Research limitations and future research, as well as practical implications, are presented.

2. LITERATURE REVIEW

2.1 International Strategic Alliances and International Entrepreneurship

A strategic alliance may be defined as a contractual agreement between at least two partners toward the achievement of a mutually beneficial goal, in a determined amount of time (Coombs and Deeds 2000; Deeds and Hill 1996). The international strategic alliance (ISA) literature takes the definition one step further to focus on cross-border partners. The agreement may take different governance structures such as in-licensing, cooperation in R&D, out-licensing, joint ventures or mergers and acquisitions (Li et al. 2010).

The fundamental purpose of a strategic alliance is conceptually underpinned by the resource-based view of the firm and organizational learning theory (Dong and Glaister 2006; Geringer 1991). Firms have specific resource endowments (Barney 1991) but require additional resources and skills to build a durable competitive advantage (Hitt et al. 1999). Experience with partners leads to opportunities for learning, even tacit knowledge, adding to the partner's resource endowment (March and Levitt 1999). Alliance partners are an important source of external knowledge (Cumming et al. 2009) such as international knowledge that may be sourced from alliance partners (Colombo et al. 2009). Strategic "fit" is thus of major concern when choosing partners (Luo 1998). The search for complementary capabilities and unique competencies leads to new partners being preferred to prior ones to increase information asymmetry (Li 2010). International heterogeneity of the portfolio of alliance partners has a positive impact on productivity (Cumming et al. 2009). The combination of resources and competencies that results from such a strategic alliance is difficult to imitate by competitors, thus increasing the probability of developing a durable competitive advantage.

Due to their limited resources, small and medium enterprises (SMEs), especially international entrepreneurs, take advantage of alternative governance modes such as strategic alliances, which are particularly appropriate for smaller firms (Ojala 2009) and for entry into emerging markets (Sandberg 2013). International entrepreneurship is « a combination of innovative, proactive, and risk-seeking behavior that crosses national borders and is intended to create value. » (McDougall and Oviatt 2000). High technology firms are well represented in this field because of the international division of labor of these industries. International entrepreneurship literature has found many similarities between high-tech SMEs and Born Globals (Kuivalainen et al. 2012; Lee et al. 2012; Melen and Rovira Nordman 2009; Zou and Ghauri 2010).

International partnerships may be the result of strategic planning or opportunity development (Veilleux et al. 2012). Bingham (2009) suggests decreasing improvisation during opportunity selection to focus on those generating greater long-term value, building on their experience, and connecting across opportunities to generate performance advantage. On the other hand, during opportunity execution, increasing improvisation permits plasticity and agility to change and to respond quickly to unforeseen needs. Opportunities become more frequent as the firm is integrated into both domestic and international networks (Chandra and Coviello 2010). Fernhaber and Li (2013) found that older ventures benefit more from exposure to international alliance partners while younger ventures are more influenced by international exposure from geographically proximate firms; however, for new ventures, both types of network relationships positively influence their internationalization. Delerue and Lejeune (2012) argue, however, that being located in a geographic cluster in itself does not increase the probability of forming new international alliances; mimetic behavior among members of a cluster does. Other authors cast doubt on the ability of strategic alliances to influence early internationalization or the performance of smaller firms (Li et al. 2012) but state that the different resources and competences the alliance furnishes may influence the internationalization process. Finally, a recent study by Sleuwaegen and Onkelinx (2014) found that partnerships appear to be an appropriate way to overcome the liability of newness, identified as the primary cause of global start-up failure, as opposed to the added complexity associated with rapid and wide-scope internationalization.

2.2 Alliance Partner Selection

Partner selection is one of the crucial decisions related to strategic alliance development (Brouthers et al. 2003; Hitt et al. 1995; Ireland et al. 2002). Of several theories of the internationalization of the firm that suggest elements upon which developed country firms may evaluate and select alliance partners, the present study retains two theories which are widely used in the literature on international entrepreneurship

related to the management of technology firms. The Resource-Based View (Barney 1991; Barney 1995; Barney et al. 2001; Hamel and Prahalad 1995; Peng 2001; Teece et al. 1997; Wernerfelt 1984) tends to focus on the compatibility of new foreign partners; specifically, complementarity of resources, of skills, and of strategic intentions. Firms have specific resource endowments (Barney 1991) but require additional resources and skills to build a durable competitive advantage (Hitt et al. 1999).

Network theory (Coviello 2006; Johanson and Mattson 1988; Powell 1998; Powell et al. 1996; Powell et al. 2005; Stuart 1998) adds the notion of centrality, meaning that a firm could intentionally manage its choice of partners over time to reach a major player at the center of the network (as opposed to peripherally) (Coviello 2006; Powell and Brantley 1992). Most new ventures are too small to attract the attention of foreign alliance partners (Cumming et al. 2009). The recruitment of team members or board members with substantial international experience may bring contacts with potential overseas alliance partners. University spin-off may build upon their international research collaborations. Support organizations or public intervention may also help in that matter by developing networks of overseas contacts. In fact, publicly funded business advisory services, in terms of hours spent, are positively associated with firms' alliances (Cumming and Fischer 2012). Indeed, Cumming et al. (2015) found a significant relationship between receipt of advice and the development on internationalization-related knowledge and competencies leading to strategies to initiate or expand internationalization. As promoters and facilitators, they help enhance network capabilities both when a firm lacks foreign market experience and when it is already trading internationally. The ability of SMEs to plan and conduct networking activities strategically with key partners is beneficial to obtain the influential resources for accelerating foreign business development (Tang 2011). For example, alliances with public companies may provide valuable growth opportunities, particularly those that have obtained more visibility, either through various inter-organizational relationships or media coverage (Reuer and Tong 2010). Although born-global managers can use both pre-existing and newly formed relationships to quickly and proactively develop new knowledge for rapid commercialization of their products as an outcome, this is not necessarily a driver of behavior in smaller born-global supply chains (Freeman et al. 2010).

Table 1 summarizes the selection criteria suggested by these theories.

Table 1
Partner Selection Criteria
Suggested by Resource-Based View and Network Theory

| Partner Selection Criteria | Resource-Based View | Network Theory |
|---|----------------------------|-----------------------|
| Reputation of the international partner | | X |
| Partner's competency | X | |
| Complementary resources and skills | X | X |
| Compatibility of strategic intentions | X | |
| Central position in the network | | X |

2.3 Selection Criteria by Alliance Function

As part of the reputation of the international partner, Roy (2012) looked at the trustworthy behavior, finding that partner benevolence is facilitated by relationship-oriented criteria, whereas partner competence is facilitated by task-oriented criteria, and underlining the importance of the host country governance. Cooperation based on self-commitment of the partners is relevant for successful alliances in the context of uncertainty, moreover, in a transition economy (Fink and Harms 2012).

While looking at the impact of networks in accelerating new venture sales into foreign markets, Yu et al. (2011) confirmed that different types of required knowledge (technology or marketing) acquired through different types of alliances differentially impact the likelihood of new venture internationalization in a context of U.S. biotechnology firms. Indeed, in a context of network cohesion, while marketing alliance favors initial foreign market sales it will be less likely for technology alliances. Li et al. (2012) add that marketing capabilities of partners promote SMEs successful innovation in foreign economies. Lee et al. (2012) suggest that alliances help overcome both liabilities of newness and smallness. More specifically, they showed that R&D alliances are directly linked to survival, suggesting the importance of the accumulation of technological resources when firms seek international expansion.

Hitt et al. (2000) have pointed out the necessity for future research to examine how partner selection criteria may vary for alliances established for different objectives. Likewise, regarding joint venture alliances, Geringer (1991), who focused on the relation of critical success factors to selection criteria, points out: "In the most general terms, the global firm requires a partner whose strengths meet the primary needs of the venture. If marketing and distribution are the principal requirements, the ideal local partner will be an experienced and established distributor of related products. If relations with the home government are critical, a local partner with close ties to the government is needed." Since weaknesses in a firm's resources and competencies for the task to be accomplished suggest the qualities to look for in a potential partner (Moen et al. 2010), the particular situation of the firm and/or its objective in desiring to establish an alliance may influence the selection process, i.e., the selection criteria which are appropriate. Therefore, studies must focus on alliance function to enhance research in this area and to provide guidance for international managers. However, few studies were found which investigate how partner selection criteria differ for various functional objectives of international alliances.

For high-tech products, reducing the overall time required to develop a product is often critical. A firm seeking an R&D partner, especially if the firm is an SME, may be attempting to complete its limited resources. For example, reducing development time may require a partner with superior equipment, unique competencies, or financial capacity to help the SME complete important development projects. Partners must have compatible objectives and expectations of the alliance relationship to ensure equitable participation and sharing of research results. In the case of INVs in the high-technology sector, one or more R&D alliances may well be necessary to survive, due to the magnitude of the financial resources required and the level of technical knowledge. However, Cumming et al. (2009) indicate that international heterogeneity of academic alliance partners may decrease productivity. However, firms that have developed capabilities in establishing research partnerships can then build on these capabilities to launch new (overseas) partnerships focused on the commercialization of innovation (Meyer et al. 2009).

For a production alliance, in addition to financial resources and equipment, the partner's technical and managerial capabilities are essential to manufacture complex high-tech products, as well as their ability to provide either unique competencies or lower cost compared to other production firms. Alliances may also allow smaller production runs than is acceptable as a contract for production firms. These smaller lots may be used for clinical studies in the case of biotechnology products or pilot projects in other technological areas.

On the other hand, alliances formed for the purpose of commercializing products require partners that can provide marketing services coherent with the nature and the quality of products or services to be distributed. For industrial goods, the level of quality may be reflected in the firm's reputation in the local market or its specialization in the sale of complementary products. Its management capabilities and the technical expertise of its sales force (degree of experience and training to sell and perhaps demonstrate

high-tech products) may also be important. Partners must have specific market knowledge and access to distribution channels in appropriate market segments at a profitable price.

Therefore, this study suggests that a single set of selection criteria for different functional objectives cannot accurately describe the factors considered by managers when choosing alliance partners. Thus, this study proposes that, from the perspective of developed country managers, selection criteria are different according to the functional objective of the alliance.

Proposition 1: When evaluating alliance partners, selection criteria used by developed country managers vary for different alliance functions: R&D, Production, or Marketing.

2.4 Selection Criteria by Economic Context: Developed Countries Versus Emerging Markets

The vast potential of emerging markets is at the forefront of most discussions concerning the international development of the firm. Following the global economic downturn of 2008–2009, growth forecasts for emerging markets are generally positive, although reduced from prior expectations. Companies must remain vigilant in the face of important structural transformations in spite of the recent slowdown, since, in addition to their potential as markets for products and services, emerging markets may represent a source of new and important partners for international strategic alliances. They represent additional challenges due to differences in cultural heritage, level of economic development, national and industrial policies (particularly government support and foreign investment policies). It follows that selection criteria for developing countries may reflect their differences from developed economies.

In their study of managers in three developed countries, Hitt et al. (2000) found 14 selection criteria that were used for selecting alliance partners in 3 emerging markets. They also studied the emerging-country perspective by measuring the criteria employed by emerging country managers seeking alliances with partners in developed countries. On the other hand, Dacin et al. (2001) used the same criteria for U.S. firms and found they used only 5 of the Hitt et al.'s 14 criteria when evaluating alliance partners in South Korea. Both of the aforementioned studies focused on the frequency with which criteria were mentioned. Moen et al. (2010) is the only study found examining selection criteria used by INVs. Also studying selection criteria for developed country partners, Moen et al. (2010) focused on the importance of selection criteria in several alliances using case studies of three Norwegian INVs in their alliances with UK firms. They found 6 criteria to be of importance, four of which are associated with those used by Hitt et al. (2000) plus two others: *Trust* (personal chemistry between top managers) and *Partner's reputation*. Several other of Hitt et al.'s (2000) criteria were found to have little importance. The 16 selection criteria suggested by the above studies are juxtaposed in Table 2.

Table 2
Selection criteria for International Partners used by Developed Country Managers

| Empirical studies | | |
|---|---|--|
| Hitt et al., (2000) | Dacin et al. (2001) | Moen et al. (2010) |
| Most frequently Mentioned criteria | Most frequently mentioned criteria | Most important criteria |
| 1. Complementary capabilities | 4 | #2 |
| 2. Unique competencies | 5 | |
| 3. Industry attractiveness | | |
| 4. Capability for quality products | 3 | |
| 5. Managerial capabilities | 2 | |
| 6. Financial assets | 1 | #6 |
| 7. Special skills to learn from partner | | |
| 8. Intangible assets | | |
| 9. Willingness to share experience | | |
| 10. Previous alliance experience | | |
| 11. Market knowledge/access | | #3, #4 |
| 12. Cost of alternatives | | |
| 13. Partner's ability to acquire skills | | |
| 14. Technical capabilities | | |
| | | #1 Trust (personal chemistry) #5 Partner's reputation |

Only two criteria are common to all three studies mentioned above. Differences might depend upon the size of firms studied, the objectives of the alliances, their country of origin, as well as the host country context and the nature of potential partner firms. Neither Hitt et al. (2000) nor Dacin et al. (2001) studied selection criteria differentiated by the objective to be pursued in the alliance. Without specifically mentioning the function of the alliances studied, the importance that Moen et al.'s (2010) respondents accorded to market knowledge and access (ranked 3rd and 4th, respectively), suggest that the focus of the study was marketing alliances.

In their suggestions for future research, Hitt et al. (2000) and Dacin et al. (2001) suggest that the objective of alliances may influence the selection criteria used. Furthermore, they state that developing international strategic alliances with emerging market partners is critically important worldwide to successfully participate in the new global economy. Knowledge of the phenomenon is still in its infancy and more research is required (Moen et al. 2010).

Broader research and the study of selection criteria which are specific to particular functional objectives of alliances are called for (Moen et al. 2010). In addition, no research was found that delves into the possible differences in perspective of firms which restrict their alliance portfolios to developed country partners versus those that include emerging markets in their partner choice set.

The literature discusses the dimensions of uncertainty and risk perceptions related to emerging markets as well as the notions of physical and psychic distance. Several authors mention that as firms gain international experience, it may alter their uncertainty and risk perceptions, either by inducing de-

internationalization or leading them to penetrate distant markets (Li et al. 2012; Liesch et al. 2011). Societal knowledge of the entering firm, and more specifically experiential knowledge, has an uncertainty-reducing effect in markets that are relatively less distant from its home market. More specifically, the impact of geographic distance on the formation of R&D alliances diminishes when firms have prior ties, operate in the same product market, or possess similar technological knowledge (Reuer and Lahiri 2014). On the other hand, geographic proximity may act as a substitute for prior ties between firms since it reduces governance and monitoring costs. As a consequence, geographic proximity, prior ties and similar technological knowledge may be considered potential selection criteria of foreign market partners.

From the perspective of firms in emerging economies, strategic alliances lead to access and learning from partners' knowledge, thus enhancing their innovativeness, especially when the partners have complementary knowledge sets (Fang 2011). However, differences in cultural and business practices, as well as a lack of trust between local and foreign firms, make it more difficult for both partners to absorb and integrate their complementary knowledge bases. In emerging economies, strategic alliances often are associated with weak legal and regulatory environments that make the integration of complementary knowledge sets challenging. Therefore, while all countries may be unknown to a firm, emerging economies are likely to present a greater deal of uncertainty for INVs. Furthermore, communication may be perceived as an important barrier. Partnerships with developed country firms may therefore appear more certain or more "comfortable" for many INVs. In these circumstances, selection criteria for potential emerging country partners may reflect this uncertainty, perhaps including more tangible "proof points," or evidence that the emerging market partner is strong and reliable (e.g., the reputation of the firm, its market share, previous partners...).

Whether smaller firms enter emerging markets early or later in their international development does not find consensus in the literature (Zhou et al. 2012). While studying emerging market entry pattern of international SMEs, Sandberg (2013) found that they entered emerging markets in the later stages of their internationalization process. Building on their prior international alliance experience, firms extend their technology alliance portfolios across both developed and emerging economies, increasing the geographical diversity of their alliance portfolios strategies (Jacob et al. 2013). According to these authors, firms with alliance partners from developed countries have an increased propensity to form alliances in emerging countries. Firms may also develop a region-specific alliance experience. To the contrary, Normand and Tolstoy (2014) propose that because SMEs tend to internationalize fast on a wide global scale, their market selections do not seem to be dictated by distance measures. In fact these authors showed that psychic distance may actually enhance knowledge transfer. For example, Cuervo-Cazurra (2011) showed that some firms strategically choose a country that is dissimilar to their country of origin for their first foreign expansion. This may be due to knowledge already acquired in their home market, e.g., knowledge to manage complexity, developed by having multiple operations at home; knowledge to manage differences in competitive conditions, developed by operating in business-to-business industries, and knowledge to manage differences in institutional environments, developed by allying to a foreign firm at home. This does not justify why they would "strategically choose" (i.e., prefer) a dissimilar market to their country of origin. Therefore, there is no clear agreement on whether distance, be it psychic or geographic, has an impact on the partner selection decision. As a consequence, proximity may or may not be a partner selection criteria used by SMEs.

The current study builds on previous research to expand our understanding of how INVs evaluate potential alliance partners by differentiating selection criteria for different operational functions (the objectives to be attained by engaging in the alliance). It approaches the question of whether different criteria are used by managers that limit their potential partners to developed countries or whether they include emerging markets to the partner choice set. Propositions are posed which suggest that selection criteria vary based on

the objective of the alliance: R&D, Production, or Marketing. A final proposition suggests that, due to the additional risk represented by emerging markets, additional criteria are used by firms which include emerging markets as potential partners. Using both American and Canadian respondents, this study contributes to a broader understanding of the international strategic alliance phenomenon as called for in the literature. Table 3 summarizes the positioning of the present study versus previous research.

Table 3
Comparison of the present study to previous research

| Authors | Hitt et al. (2000) | Dacin et al. (2001) | Moen et al. (2010) | Present study |
|--|---------------------------|----------------------------|---------------------------|---|
| Size of sample firms | Multinational | Multinational | INVs | INVs |
| Origin of sample firms | US, Canada, France | US | Norway | US and Canada |
| Alliance function | Not differentiated | Not differentiated | Marketing | R&D Production Marketing |
| Origin of partners | Mexico Poland, Romania | South Korea | United Kingdom | 22 countries |
| Level of development of partner countries | Emerging countries | Developed country | Developed country | Developed and emerging countries |

The present study contributes to the international entrepreneurship literature. It proposes that SMEs do not have the large resource endowments of larger firms studied by Hitt et al. (2000) and Dacin et al. (2001). Even though our sample firms were from developed countries, we propose that INVs emphasize selection criteria that reflect their newness and fragility (size, smaller resource endowments, and often the absence of recurrent revenues). INVs not only search for strong partners who can assure successful R&D, high-quality production, and rapid commercialization; it is a matter of survival. This is in line with Moen et al.'s (2010) study of INVs (evaluating potential partners in a developed country) suggesting that, for marketing alliances, three of the most important selection criteria for INVs when considering partners in a developed country are trust, partner's reputation, and financial assets. These criteria are in addition to the habitual factors of complementary capabilities for most alliances, as well as market knowledge and market access normally required for marketing alliances.

These firms also have an urgent need to build their networks. Network theory, discussed above, also suggests that firms should build their networks by seeking partners that are central in their respective networks; i.e., seeking major players with influential resources (Coviello 2006; Powell et al. 2005; Tang 2011). Furthermore, partners should have solid reputations with visibility (Reuer and Tong 2010). These factors may have a positive influence on the INV's reputation and the Possibility of future alliances. Strategic intention (or how the partner plans to achieve its organizational vision) and the compatibility of partners (compatibility of strategic routines) have also been suggested by the literature (Coviello 2006). Compatibility of partners and their strategic routines is an obvious criterion suggested by the resource-based view of the firm. However, it is perhaps too often neglected based on the frequency of alliance failures. Compatibility will be included in this research due to its fundamental importance to the success of an alliance. This literature leads to Proposition 2:

Proposition 2: In addition to partner compatibility and complementary capabilities, INVs evaluate potential alliance partners using selection criteria which reflect trustworthiness, partner's reputation, financial status and the willingness to share financial risk, as well as centrality in its network.

R&D Alliances

Access to capital and its costs may be a matter of survival for many SMEs from developed countries. Those firms that are in the initial stages of product innovation and development will therefore require partners that will allow them to survive; i.e., partners that can share the risks of these costly activities due to their large financial assets and their solid reputations. Naturally, complementary and/or specialized R&D capabilities are fundamental to such alliances. While these same criteria are important to all firms choosing R&D alliance partners, we propose that due to their small size and limited resource base, INVs will more often mention the criteria mentioned above.

*Proposition 3: In addition to partner compatibility and complementary capabilities, INVs, which limit their evoked partner set to developed country partners, evaluate potential international partners for **R&D alliances** on criteria that reflect reputation, access to capital, and willingness to share risk.*

Furthermore, since emerging market partners may not possess the capital assets and capacity to share risk, nor the reputation required to give them confidence, INVs may emphasize other attributes of these partners when considering these as potential R&D partners. The particular competencies in certain emerging markets may be the most appropriate sources of specialized assets and skills, overriding the foreignness of emerging markets and the greater potential risk that may be present in an unknown environment. However, respect of intellectual property may be a salient criterion.

Production Alliances

Production partners, on the other hand, must have the specialized technical skills required to manufacture quality biotechnology products at a reasonable cost. For many firms, low cost is generally the driving factor behind off-shore production. While all firms involved in production alliances may use similar criteria, the financial limitations of INVs may also lead them to seek out partners who can offer them sharing of production costs and low-cost production.

*Proposition 4: In addition to partner compatibility and complementary capabilities, INVs, which limit their evoked partner set to developed country partners, evaluate potential international partners for **Production alliances** on criteria that reflect the cost of production and the willingness of the partner to share the cost of production.*

Marketing Alliances

For INVs whose products are to be commercialized – which represents a phase when regular revenues are essential to the future capacity of the INV to continue its in-house innovation – minimizing the delay to actual sales is of the utmost importance. INVs therefore need to seek out established partners with market knowledge that have market access through their sales forces and distribution networks (most likely linked

to their marketing of complementary products). As a case in point, Moen et al. (2010) found that developed country INV managers selected partners for marketing alliances in another developed country based on the level of trust they believed they could have in the partner, the firm's complementary capabilities, its knowledge of and access to markets, its reputation, and its financial assets. In the context of marketing alliances for biotechnology products, complementary capabilities may well be the partner's marketing expertise, its possession or access to a specialized sales force and an appropriate distribution network, so important for biotechnology firms.

*Proposition 5: In addition to partner compatibility and complementary capabilities, INVs, which limit their evoked partner set to developed country partners, evaluate potential partners for international **Marketing alliances** on criteria that reflect trust, market knowledge and access, reputation, and financial assets.*

The following section describes the industrial sector chosen to investigate the above propositions as well as data collection and analysis procedures.

3. DATA AND METHODOLOGY

3.1 *The Biotechnology Industry*

The investigation of the evaluation of partners for ISAs requires the study of an industry which inherently relies on cooperative agreements. The therapeutic sector of the biotechnology industry was chosen for the present study since the continual research for new partners to gain complementary capabilities and unique competencies is a fundamental characteristic of the sector (Roijakkers et al. 2005). In fact, the restructuring of the therapeutic sector with which they are now faced requires them to develop internationally by way of partnerships. In effect, Western biotechnology firms in developed countries, as well as pharmaceutical firms, are faced with a "new normal" requiring them to reinvent their traditional business model and market strategy (Ernst&Young 2010). Government and private insurers in these countries are placing "unprecedented pressure" on life science companies as they confront mounting healthcare costs, aging populations, shrinking tax bases, and the necessity to provide care for a larger group of citizens (Ernst&Young 2009a). To survive, they must efficiently respond to this changing reality in developed countries by supplying a stream of innovative lower-cost products to providers in the West as well as leveraging their successful products by capturing demand from emerging markets with lower purchasing power and specific healthcare needs (Ernst&Young 2009b). In effect, in 2010, emerging markets for therapeutic products were expected to grow by 15% to 17% (compared to 3% to 5% estimated for the U.S. market) and as high as 25% to 27% for China. Seventeen emerging markets were expected to represent as much as 50% of global therapeutic market expansion (Berkrot and Blanchier 2010). Moreover, several of these emerging markets were fast evolving into important markets for therapeutic products for both traditional as well as local health problems requiring innovative solutions (Looney 2010). They were actively seeking partners from developed countries to exploit their potential, while developed firms were seeking the solutions and advantages they offer.

It remains to be seen if the hopes of the therapeutic sector of the biotechnology and pharmaceutical industries will be realized as the global economy recovers: the view that emerging markets may be an opportunity to gain "global competitive advantage by creating local innovative precedents in how medicines are developed, distributed, promoted, and reimbursed." (Looney 2010). The global economic crisis has undoubtedly affected the previous optimistic forecasts. However, as mentioned, forecasts of

economic growth are still positive for many emerging markets and firms must remain vigilant to the possible opportunities that they may represent in the future.

3.2 *Sample and Data collection*

The present study was conducted in Boston and Montreal, two of the largest North American biotechnology clusters, with two random samples of American and Canadian-owned and -controlled dedicated human health biotechnology firms. We identified Boston companies using the Massachusetts Biotechnology Industry Directory, BioSpace, Bio Member Directory, and Bioscan. These databases allowed the preparation of a list of 37 organizations. In Montreal, we drew the list of 38 potential respondents from Canadian and Quebec government websites, the trade association BioQuebec, and scientific parks (Cité de la biotechnologie, Technopole Angus, and Technoparc St-Laurent). The final samples are composed of 12 Boston firms and 16 Montreal firms (which represents response rates of 32% and 42%, respectively). Respondent firms' socio-demographic characteristics were not significantly different from those of non-respondent human health biotechnology firms in the two clusters.

To study selection criteria used for partner selection, semi-structured interviews were conducted with 25 executives involved in partner selection for their firm's alliances. A questionnaire was used to guide the interviews and to ensure the comparability of collected data (Daunais 1992; Huber and Power 1985) while allowing maximum flexibility.

Respondent firms' profiles include previous alliance-management experience (Teng and Das 2008), acquisition by the firm of venture capital (Baum and Silverman 2004), presence on the stock market, age of the company at the time of the study (Powell et al. 2005), number of patents (Buckley and Casson 1996; Niosi 2003), number of employees (Pangarkar and Klein 2001), number of products (Baum and Silverman 2004), and years to first international activity.

In order to retain as much detail as possible from data analysis, respondents were asked to describe the manner in which they evaluate potential partners. This method was deemed appropriate, since several authors point out the specificity of the biotech sector (international orientation, need for rapid development and success in all possible markets -- to obtain a high return on R&D investments before the technology becomes obsolete or that patent protection ends -- and greater use of alliances) and suggest that biotech firms necessitate a specific study (Hendry and Brown 2006; Roijakkers and Hagedoorn 2006; Rothaermel and Deeds 2006). Requiring respondents to recall the criteria they used to evaluate past or present alliance partners was preferred to proposing a list of criteria found in prior research because it was expected that respondents would have the tendency to answer "yes" to all or almost all criteria on such a list, since each is logically important. The objective was to capture all possible differences across alliances formed for different functions and in different market contexts (developed countries and emerging markets). Under this method, respondents may forget some criteria used; however, it is likely that the criteria they remember represent the most relevant ones for them. Criteria extracted through content analysis were then grouped into categories, as described below in Table 6. These categories were constructed to reflect, when possible, the selection criteria used in prior studies.

For R&D alliances, elements mentioned by respondents were grouped into 10 criteria: *Complementarity* (of strategies)/*Compatibility* (of organizational strategies and routines), *Financial resources*, *R&D competencies*, *Credibility/reputation* obtained in the eyes of investors and other organizations, *Acceleration to market*, *Possible future alliances*, *Add to portfolio* (pipeline: to complete product portfolio),

Competencies Phase II (specific technological competencies for clinical trials), *Accepts shared risk*, and *Survival* (needs the alliance to survive).

For Production alliances, respondents identified 6 criteria: *Complementarity* (of strategies)/*Compatibility* (of organizational strategies and routines), *Opportunity*, *Low cost*, *Shared cost*, *Experience*, and *Performance*.

For Marketing alliances: elements mentioned were grouped into 13 criteria: *Target market size* (number of people in the country suffering from the targeted disease), *Existing sales force*, *Marketing competencies*, *Capacity to buy* (financial resources to buy the product), *Potential price* at which the products could be sold, *Approval time*, *Reimbursement policy* (for government purchases of therapeutic products), *Developed healthcare system*, *Total population*, *Respect of intellectual property*, *Proximity*, *Market diversification*, and *Risk diversification*.

The sections below present the profile of respondents, results, discussion, research limitations and future research, as well as practical implications of the study's findings.

4. RESULTS

4.1 Profile of Sample Firms

The overall sample profile is presented in Table 4. Nearly half of the founders of the respondent firms (48%) had previous alliance-management experience in the high-tech area. Half of respondents had previous alliance management experience (52%). Venture capital had been obtained by 84% of firms and 48% were on the stock market. The age of respondent firms is from 2 to 20 years (median 8). The number of patents ranges from 0 to 47 (median 1), the number of products from 1 to 59 (median 4), and the number of employees from 3 to 240 (median 34). The total number of alliances ranged from 3 to 44 (median 10) including 1 to 33 international alliances (median 5). Respondent firms took 0 to 9 years to internationalization (median 2). In effect, 3 of the 25 sample firms took 7, 7, and 9 years, respectively, to internationalize their operations. All others took 1 to 6 years, with a median of 1 year. International New Ventures are often identified when internationalization occurs early in the lifetime of the firm, normally within 3 to 6 years (Coviello and Munro 1997; Hurmerinta-Peltomäki 2004). However, a closer examination reveals that if one considers the definition of International New Venture as “ventures competing primarily in their regional markets (nearby countries) or in a relatively limited number of countries” (Oviatt and McDougall 1994), these 3 seeming outliers may still be reasonable candidates to remain in the study: international intensity (international activities as a percent of total activities), number of alliances, and number of countries where they were engaged did not reveal a particular pattern for these firms. They rather experienced significant events in their management during their first three years of age which influenced the development process of their main technologies. This explains the delay in their international activities. It is worthy to say that they began their commercialization process in international markets, instead of domestic ones, confirming their profile as international new ventures. Furthermore, the selection criteria they mentioned for alliances were not unique, but shared with many other firms in the sample. For these reasons, the firms were deemed appropriate to remain in the study.

Table 4
Profile of Sample Firms (n = 25)

| | n | (%) |
|--------------------------------|---------------|--------------|
| Alliance Management Experience | 13 | (52%) |
| Venture Capital | 21 | (84%) |
| Stock Market | 12 | (48%) |
| | Median | Range |
| Age | 8 | (2–20) |
| Patents | 1 | (0–47) |
| Products | 4 | (1–59) |
| Employees | 34 | (3–240) |
| Total number of alliances | 10 | (3–44) |
| International alliances | 5 | (1–33) |
| Years to internationalization | 2 | (0–9) |

In order to develop a global portrait of the alliance activities of biotech firms, the left-hand side of Table 5 below presents the total number of alliances signed by sample firms in all markets. Sample firms mentioned a total of 239 alliances in 23 countries, including the domestic market. The table also identifies the functions (objectives pursued) by these alliances. For R&D, there were 75.3% (180/239) alliances, 3.8% (9/239) were for Production, and 20.9% (50/239) were for Marketing. This classification allows analysis of Proposition 1, that selection criteria differ depending on whether alliances are formed for purposes of R&D, Production, or Marketing.

The right-hand side of Table 5 shows the origin of alliance partners of the North American sample firms. Of the 239 alliances, 157 (65.7%) are international strategic alliances (ISAs). Of these international agreements, 93.6% (146/157) were with developed country partners while only 7.0% (11/157) were with emerging country partners. R&D alliances are predominant (72.6%, 106/146) among ISAs signed with developed country partners, while alliances in emerging markets were divided between R&D (45.4%, 5/11) and Marketing (54.5%, 6/11). Production agreements are rare: 3.8% (6/157) and all of these were in developed countries.

Table 5
Number of Alliances by Alliance Function
and by Economic Development of Alliance Partners' Countries
(Firms: n=25)

| Function ^a | Alliances All | | Domestic alliances | | International strategic alliances (n=157) | | | | | |
|-----------------------|---------------|-------------|--------------------|-------------|---|-------------|---------------------|-------------|------------------|-------------|
| | | | | | Total international | | Developed countries | | Emerging Markets | |
| | n | % | n | Vert. % | n | % | n | Vert. % | n | Vert. % |
| R&D | 180 | 75.3 | 69 | 84.1 | 111 | 70.7 | 106 | 72.1 | 5 | 45.5 |
| Production | 9 | 3.8 | 3 | 3.7 | 6 | 3.8 | 6 | 4.1 | 0 | 0.0 |
| Marketing | <u>50</u> | <u>20.9</u> | <u>10</u> | <u>12.2</u> | <u>40</u> | <u>25.5</u> | <u>34</u> | <u>23.3</u> | <u>6</u> | <u>54.5</u> |
| Total | 239 | 100 | 82 | 100 | 157 | 100 | 146 | 100 | 11 | 100 |

^a Function = objective pursued by the alliance: R&D, Production, Marketing

Respondent firms signed ISAs in 22 foreign countries. An examination of the emerging markets where alliances have been signed reveals that four (4) of these countries are emerging markets: China (6 alliances), India (3), Indonesia (1), and Morocco (1). However, while representing 18.2% (4/22) of the foreign countries where alliances have been established, these emerging markets are partners in only 7.0% (11/157) of ISAs signed, or 4.6% (11/239) of the total number of strategic alliances (foreign and domestic).

4.2 Partner Selection Criteria for Different Functional Objectives

Table 6 summarizes partner selection criteria for the three alliance functions retained in the study: R&D, Production, and Marketing. Criteria are presented in order of those mentioned most often by respondents. The total number of mentions of selection criteria by sample firms is 154. For R&D partnerships, 90 mentions were made covering 10 criteria. For Production alliances, 11 mentions were related to 6 criteria, and for Marketing alliances, 53 mentions linked to 13 criteria were expressed. *Complementarity/Compatibility* was mentioned as a selection criteria for both R&D and Production alliances, but not for Marketing alliances. All other criteria are specific to one function.

Table 6
Comparison of Respondent-Generated Partner Selection Criteria
for Different Alliance Functions

| Respondents' Selection Criteria (# of mentions) | Respondents' Selection Criteria (# of mentions) | Respondents' Selection Criteria (# of mentions) |
|---|--|--|
| R&D Alliances (Firms: n=23) | Production Alliances (Firms: n=5) | Marketing Alliances (Firms: n=18) |
| Partner selection criteria common to two functions: | | |
| Complementarity/ Compatibility (7) ^a | Complementarity/ Compatibility (4) | |
| Partner selection criteria unique to a particular alliance function: | | |
| Financial resources (17)^b | Opportunity (2) | Target market size (10) |
| R&D competencies (16) | Low cost (2) | Existing sales force (8) |
| Credibility/Reputation (11) | Shared cost (1) | Marketing competencies (7) |
| Acceleration to market (10) | Experience (1) | Capacity to buy (7) |
| Possible future alliances (8) | Performance (1) | Potential price (6) |
| Add to portfolio (pipeline) (7) | | Approval time (3) |
| Competencies Phase II (6) | | Reimbursement policy (2) |
| Accepts shared risk (5) | | Developed healthcare system (2) |
| Survival (3) | | Total population (2) |
| | | Respect of intellectual property (2) |
| | | Proximity (2) |
| | | Market diversification (1) |
| | | Risk diversification (1) |
| Mentions: Total 90 | Total 11 | Total 53 = 154 |

^a The figure in parentheses is the number of firms mentioning a criterion for a particular function.

^b Criteria in bold letters are those mentioned by approximately one third or more of respondents who had selection criteria for that particular function.

4.2 *Partner Selection Criteria in Different Economic Contexts*

In this study, context refers to the economic level of countries where alliances have been formed. All 25 firms are involved in partnerships with developed countries but only five are also involved in emerging markets. The 25 firms were divided into two groups. Those involved in alliances *only* with partners in developed economies are referred to as the “DC (developed countries) group” (n=20). Those involved in developing countries *and* in emerging markets are classified as the “DC-EM Group” (for developed countries and emerging markets; n=5). When documenting selection criteria in the tables that follow, the number of firms in each group was adjusted to reflect only those that mentioned criteria for a particular function. To include a maximum level of detail for future research, all criteria mentioned are included in the analysis results, even if mentioned by a single respondent. In addition, a firm with selection criteria for a function but which did not have a corresponding alliance at the time of the study was also retained, since

developing alliances is an ongoing process normally requiring a system of evaluation before signing the actual alliance.

With a focus on R&D alliance evaluation, Table 7 shows that the DC group uses a more varied list of selection criteria than the DC-EM group (10 versus 7 criteria) for partnership development. Three selection criteria are thus unique to the DC group: *Credibility/reputation*, *Possible future alliances*, and *Survival* (mentioned by 58%, 42%, and 16% of DC firms, respectively). Comparison of criteria between the two groups is questionable due to the small number of firms with alliances and selection criteria among DC-EM firms; however, one can observe that for R&D alliances, this group uses many similar partner selection criteria but that the order of frequency (number of mentions) appears to be different.

Table 7
Selection Criteria Used by Respondents for the Evaluation of R&D Partners
DC and DC-EM Groups

| Selection criteria DC Group | Nb. and % of mentions | | % Firms | Selection criteria DC-EM Group | Nb. and % of mentions | | % Firms |
|--|--------------------------|-----|------------|--------------------------------------|--------------------------|-----|------------|
| | n | % | n=19 | | n | % | n=4 |
| Financial resources | 15 | 20 | 79 | R&D competencies | 3 | 23 | 75 |
| R&D competencies | 13 | 17 | 68 | Acceleration to market | 3 | 23 | 75 |
| Credibility/reputation^a | 11 | 14 | 58 | Financial resources | 2 | 15 | 50 |
| Possible future alliances^a | 8 | 11 | 42 | Complementarity/compatibility | 2 | 15 | 50 |
| Acceleration to market | 7 | 9 | 37 | Shared risk | 1 | 8 | 25 |
| Add to portfolio (pipeline) | 6 | 8 | 32 | Add to portfolio (pipeline) | 1 | 8 | 25 |
| Complementarity/compatibility | 5 | 6 | 26 | Competences Phase II | 1 | 8 | 25 |
| Competence Phase II | 5 | 6 | 26 | | | | |
| Shared risk | 4 | 5 | 21 | | | | |
| Survival ^a | 3 | 4 | 16 | | | | |
| Total | 77 | 100 | | | 13 | 100 | |

^a Unique to the DC group

Production alliance selection criteria are shown in Table 8. *Experience* and *Shared cost* are criteria unique to the DC group; *Performance* is unique to the DC-EM group. However, due to the very small number of sample firms with criteria for selecting production partners, only one criterion (*Compatibility*) was mentioned by more than one firm in either group. Again, it is not appropriate to compare the two groups since only one firm mentioned 4 criteria.

Table 8
Selection Criteria Used by Respondents for the Evaluation of Production Partners
DC and DC-EM Groups

| Selection criteria DC Group | Nb. and % of mentions | | % Firms | Selection criteria DC-EM Group | Nb. and % of mentions | | % Firm |
|--------------------------------|--------------------------|-----|------------|-----------------------------------|--------------------------|-----|-----------|
| | n | % | n=4 | | n | % | n=1 |
| Compatibility | 3 | 44 | 75 | Compatibility | 1 | 25 | 100 |
| Opportunity | 1 | 14 | 25 | Opportunity | 1 | 25 | 100 |
| Low cost | 1 | 14 | 25 | Low cost | 1 | 25 | 100 |
| Experience ^a | 1 | 14 | 25 | Performance ^b | 1 | 25 | 100 |
| Shared cost ^a | 1 | 14 | 25 | | | | |
| Total | 7 | 100 | | | 4 | 100 | |

^a Unique to the DC group

^b Unique to the DC-EM group

Marketing criteria are more distinctive between the two groups. Table 9 demonstrates that while both groups mention the same number of criteria (10), *Marketing competencies*, government *Reimbursement policy*, and *Developed healthcare system* selection criteria are unique to firms that operate only in developed countries. *Proximity*, *Market diversification*, and *Risk diversification* are selection criteria unique to firms from the DC-EM group. For the DC group, five criteria were mentioned by at least one-third of respondents: *Target market size* (9/14, 64%) *Marketing competencies* (7/14, 50%), *Existing sales force* (7/14, 50%), *Capacity to buy* (5/14, 36%), and *Potential price* (5/14, 36%). Again, it is not appropriate to compare the two groups since only four firms in the DC-EM group mentioned criteria for marketing alliances.

Table 9
Selection Criteria Used by Respondents for the Evaluation of Marketing Partners
in Developed and Emerging Markets

| Selection criteria DC Group | Nb. and % of mentions | | | Selection criteria DC-EM Group | Nb. and % of mentions | | |
|--|-----------------------------|-----|------|-------------------------------------|-----------------------------|-----|-----|
| | n | % | n=14 | | n | % | n=4 |
| Target market size | 9 | 23 | 64 | Proximity ^b | 2 | 18 | 50 |
| Marketing competencies ^a | 7 | 17 | 50 | Capacity to buy | 2 | 18 | 50 |
| Existing sales force | 7 | 17 | 50 | Approval time | 1 | 8 | 25 |
| Capacity to buy | 5 | 12 | 36 | Existing sales force | 1 | 8 | 25 |
| Potential price | 5 | 12 | 36 | Target Market size | 1 | 8 | 25 |
| Approval time | 2 | 5 | 14 | Potential price | 1 | 8 | 25 |
| Reimbursement policy ^a | 2 | 5 | 14 | Total population | 1 | 8 | 25 |
| Developed healthcare system ^a | 2 | 5 | 14 | Market diversification ^b | 1 | 8 | 25 |
| Respect of intellectual property | 1 | 2 | 7 | Respect of intellectual property | 1 | 8 | 25 |
| Total Population | 1 | 2 | 7 | Risk diversification ^b | 1 | 8 | 25 |
| Total mentions | 41 | 100 | | | 12 | 100 | |

^a Unique to the DC group

^b Unique to the DC-EM group

5. DISCUSSION

5.1 *Are Selection Criteria Function Specific?*

Prior studies of alliance partner selection did not take all the functional objectives (R&D, Production, and Marketing) of alliances into account simultaneously; however, some did mention the importance of doing so (Hitt et al. 2000; Moen et al. 2010). This recommendation was well grounded: Table 6 demonstrates that differences in partner selection criteria are clearly evident among the three functional objectives for which alliances were formed by firms in the biotechnology sector. Of the 29 selection criteria used by respondents, only *Complementarity* (of resources, competencies)/*Compatibility* (of strategies, routines) was common to two functions: R&D and Production. Thus, 27 selection criteria were unique to one or the other of the functions (since one appears in two functions).

It appears that when evaluating partners for cooperative agreements related to R&D, respondents in the biotechnology industry do consider many, but not all, of the criteria found in previous studies. When respondents' 10 selection criteria for R&D alliance partners are compared to those found in the empirical literature (Table 2) and inherent in the underlying theories (Table 1), logical links can be made with some of these. This study's respondents did not mention *Previous experience with partner*, *Cost of alternatives*, *Industry attractiveness*, *Special skills to learn from partner*, *Intangible assets*, or *Trust*. The absence of these criteria does not appear to be due to the biotechnology industry. *Previous Experience with partner* may, however, be associated with respondents' mention of *Possible future alliances*; i.e., prior research found that firms would select firms with which they had experience, while firms in the present study choose partners with which they hope to establish future alliances or which will allow them to reach other potential partners as predicted by Network theory. Their relative young age may be responsible. *Cost of alternatives*, i.e., the cost of direct investment versus an alliance (or perhaps the cost of one partner versus the cost of other potential R&D partners) was not mentioned; however, *Financial resources* of the partner is the most frequently used criteria by INVs (74%, 17/23). In addition, it must be emphasized that selection criteria from prior research (with the exception of Moen et al. 2010) and from the underlying theories do not take into account the functional objectives pursued by the firm.

These firms also select partners who accept *Shared risk*; which may be seen as coherent with behavioral theory in that sharing risk is undoubtedly related to the compatibility of strategic intentions. *Sheer Survival* is also mentioned, but this is rather a fundamental reason to consider an alliance rather than a criterion to evaluate potential partners.

For Production alliances, 6 selection criteria include *Complementarity/compatibility*, *Opportunity* (unexpected offer coming from the partner), *Low cost*, *Shared costs* (acceptance to share costs), *Experience*, and *Performance* (Table 6). *Complementarity/compatibility* is the only one that is common with another function (R&D). These criteria may also be associated with theoretical and prior empirical results. However, there are few Production alliances, perhaps because smaller biotech firms may sell their molecules to larger firms and not be involved in production and marketing at all. The small number of criteria mentioned may be an indication that a production alliance represents a relatively more straightforward type of partnership. A possible explanation for the small number of production alliances may also be the historical practice in the therapeutic sector of signing manufacturing contracts with emerging market firms rather than developing partnerships. In addition, smaller biotechnology firms may sell or out-license molecules to larger pharmaceutical companies and thus do not manufacture or sell products per se.

Marketing alliance criteria are the most numerous, and the 13 are unique to this function. Two of these may be logically linked to reference theories (in Table 1), which suggest Partner's Competency and Compatibility of strategic intentions as criteria. Overall, about half of the criteria found in this study may be associated with those found in the empirical literature. *Existing sales force* (mentioned by 8 firms) and *Marketing competencies* (7) are partner-related criteria permitting an evaluation of partners; however, respondents focused much of their attention on country, industry attractiveness (also mentioned by Hitt et al. (2000) among selection criteria) and market attractiveness. In fact, 9 selection criteria are directly linked to these.

- Country attractiveness: *Proximity* (2), *Total population* (2), *Developed healthcare system* (2), *Respect of intellectual property* (most often based on the laws of the country rather than the good faith of the partner) (2)
- Industry attractiveness: *Reimbursement policy* (of the government-buyer) (3), *Approval time* (for the sale of the medicine) (3)
- Market attractiveness: *Target market size* (10), *Capacity to buy* (7), *Potential price* (that can be charged for the product) (6), *Risk diversification* (1) and *Market diversification* (1). (These final two criteria may also be perceived as being related to strategic objectives of the firm: drivers to enter into strategic alliances.)

From a strategic standpoint, the analysis of industry and market attractiveness are normally preliminary steps to searching for partners within markets already identified as appropriate. It may be that respondent firms rely on the new partner's knowledge to inform them of country, industry, and market attractiveness in a particular country. This delegation of power/control of market choice could be even more important in emerging markets due to the scarcity of reliable statistics and other information related to the distribution and sales system for therapeutic products, which may be quite different from country to country. On the other hand, lack of a thorough evaluation of market attractiveness (different countries' characteristics, industry conditions, and target market attractiveness) may be suboptimal.

Proposition 1 suggests that selection criteria used for evaluation of partners vary by alliance function. From the results above, it is clear that Proposition 1 is supported. With the exception of 1 criterion (*Complementarity/Compatibility*), all partner selection criteria are unique to the functional objective of the alliance.

Proposition 2 draws selection criteria of potential partners from the resource-based view and network theory. Indeed, respondent firms look for *Complementary resources* and *Capabilities* in their evaluation of alliance partners. They were also concerned with the *Compatibility* of their partners. In addition to clearly stating the keywords *Complementary* and *Compatibility* for R&D and production alliances, they also specified what type of resources (*Financial resources* for R&D, technology competencies for R&D, *Existing sales force* for marketing) and capabilities they were looking for (*R&D competencies*, *Competencies phase II*, *Experience* in production, *Marketing competencies*). Trustworthiness was mainly expressed by respondents who included *Respect of intellectual property*. Surprisingly, this criterion was mentioned for marketing alliances but not for R&D alliances. One explanation would be that *Credibility/Reputation*, frequently mentioned for R&D alliances, implies to these firms that partners will respect intellectual property. *Financial resources* was mentioned as a criterion and is perhaps reflected in resources to which respondent firms hoped to gain access through R&D alliances. *Willingness to share risk* was mentioned for R&D alliances. It takes the form of *Shared cost* in production alliances. As for *Centrality in the network*, it was expressed for R&D alliances by firms having the strategic intent to choose partners who would open doors to other *Possible future alliances*. Therefore, the use of selection criteria predicted by the resource-based view and network theory may be inferred from study results and Proposition 2 is supported.

5.2 *Are partner selection criteria influenced by the consideration of partners from more varied economic contexts?*

As mentioned in the results section (Table 5), a total of 239 alliances were signed by 25 biotechnology firms. Of these, 157 are with international partners. Eleven (11) of the international alliances were signed by 5 firms involved in 4 emerging markets. It becomes quickly apparent that emerging markets are just now starting to be recognized for their potential in biotechnology. They represent only 4.6% (11/239) of total alliances and 7.0% (11/157) of partnership agreements with international partners. Furthermore, only about one in five firms (20%, 5/25) is involved in emerging markets. Interviews revealed that several firms do not perceive Chinese and Indian markets as mature; nonetheless, they are being regularly monitored, due to their difficult-to-match operating costs. Countries likely to join the European Community are also being closely monitored.

The objectives of these 11 alliances are for exploring knowledge (R&D) and exploiting knowledge (Marketing). As expected, the 4 emerging markets in which firms are involved are part of the major emerging country groups found in the literature: China and India are members of BRICS (Brazil, Russia, India, China, and South Africa); Indonesia is a member of VISTA (Vietnam, Indonesia, South Africa, Turkey, Argentina) and also of CIVETS (Colombia, Indonesia, Vietnam, Egypt, Turkey et South Africa). Morocco is listed as an emerging market on most lists but not in the “named” groupings. Furthermore, China and India are identified in the literature for their biotechnology potential. However, this is not the case for Morocco. A closer look at the data reveals that the only partnership in Morocco was an R&D alliance with a university. Based on the literature, partnerships would have been expected with biotech firms in Brazil, Vietnam, and perhaps South Africa. It thus appears that respondent biotech firms may have only “scratched the surface” of the growing potential for their industry in emerging markets.

The literature also suggests that the portrait above will change very rapidly due to the aggressive efforts of certain emerging countries to develop their biotech sectors and due to the opportunity they represent for western biotech firms to increase not only the efficiency but the effectiveness of their operations and, in some cases, to survive in the “new normal” which is changing the ecosystem of the life sciences industry. Efficiency may be gained through lower-cost infrastructures and human resources; effectiveness may be improved through the joint exploration of new molecules for local health problems in emerging markets and perhaps the ability to do parallel research on a larger number of molecules.

Tables 7, 8, and 9 compare selection criteria mentioned by respondents who were active only in alliances in developed countries (DC group) to those cited by firms involved in alliances in developed as well as emerging markets (DC-EM group). Both groups use a variety of criteria, especially for R&D and Marketing alliances.

For R&D alliances (Table 7), the DC group shows 10 criteria while only 7 criteria are mentioned by the DC-EM group. Seven of these are identical for both groups and three are exclusive to the DC group: *Credibility/reputation* (11 mentions), *Possible future alliances* (8), and *Survival* (3). The DC-EM group may put emphasis on factors other than credibility and reputation or the worthiness of potential partners for future alliances (after the initial one). Many emerging market partners have not had time to build their experience, credibility and reputation. However, each firm individually used very few criteria to select partners. To calculate the range of criteria used, *Survival* was removed from the list of the DC group since it does not distinguish between which partners to choose. In addition, two firms that had alliances but that

did not mention selection criteria for R&D partners were removed; it may be that selection criteria in these firms are not formalized. Results indicate that respondents in both groups use a range of 1 to 6 criteria. Six (6) firms 1 to 3 criteria, suggesting that some firms may underestimate the strategic importance and the complexity of such agreements. Partnerships are notorious for their complexity and often end in disappointment and rupture.

It is not appropriate to compare the two groups on Production criteria, since only 1 firm in the DC-EM group had signed a Production alliance, and only 4 in the DC group. Few criteria were mentioned for production partnership agreements and the two groups are similar in their choice of three factors: *Compatibility*, *Opportunities*, and *Low cost*. *Experience* and *Shared risk* were mentioned only by the DC group, while *Performance* was unique to the second group. Due to the scarcity of the data, little can be concluded or extrapolated from this data.

Similar to the case of R&D alliances, while not all firms were engaged in Marketing alliances at the time they responded, more than two-thirds (18/25, 72%) mentioned partner selection criteria for Marketing alliances. Some may have had alliances of this type in the past or are planning to engage in one in the future. For example, many firms mentioned that when the product is ready to be commercialized, they intend to sign agreements with global pharmaceutical companies.

Marketing criteria were more numerous than criteria for R&D alliances. Of the 13 criteria for marketing partnerships used by the DC group, only 7 are shared with the DC-EM group: *Target market size*, *Existing sales force*, *Capacity to buy*, *Potential price*, *Approval time*, *Respect of intellectual property*, and *Total population*. The DC group also looks for *Marketing competencies*, government *Reimbursement policy*, and a *Developed healthcare system*. In addition, EM-DC firms appreciate *Proximity* to foreign partners and seek *Risk diversification* and *Market diversification*. As mentioned earlier, few of these criteria generated by respondents are related to partner firms themselves but rather to their environment. Furthermore, risk diversification may be seen as a reason to internationalize a firm's commercial activities, while market diversification is way to reduce international marketing commercial risk as well as a growth strategy which leads a firm to expand its products into new markets. Choosing the right partner is normally a subsequent step. However, many biotech firms appear to shortcut the procedure, equating partners with the attractiveness of the overall market in which they operate.

Propositions 3, 4, and 5 stated that for different functional objectives of alliances, partner selection criteria differ when partners considered are from more varied economic contexts. Since only 4 INVs in the sample were involved in emerging markets it appears inappropriate to draw conclusions about differences that are observed. The analysis does show many similarities of criteria between the two groups, but INVs in both groups did use some unique criteria. The small number of firms involved may reflect the reality that, by definition, INVs are new to international markets. While certain are open to emerging markets as sources of alliance partners, these are not the first choice of most of these new ventures.

Respondents in the present study mentioned 28 selection criteria. With the exception of *Complementarity/Compatibility* (common to R&D and Production), each function was associated with selection criteria which were function specific (9 for R&D, 5 for Production, and 13 for Marketing alliances -- Table 6). Moreover, respondents mentioned 9 of the 17 (56.3%) criteria suggested by prior empirical studies. One of these criteria, *Industry attractiveness* (Hitt et al. 2000), is mentioned in much greater detail by INVs (*Approval time*, *Developed healthcare system*, *Respect of intellectual property*...).

The contribution of the present study to the literature is its support for the proposition that firms do use different selection criteria based on the functional objectives of the alliances, whether it be for R&D,

Production, or Marketing. Furthermore, new criteria were found that are not mentioned in prior research. In addition, some of the criteria mentioned by respondents are new to the literature. As a consequence, future research must distinguish the function of the partnership (objective pursued) if it is to draw conclusions or be used to orient the development of R&D, Production, and/or Marketing alliance partner selection. In addition, since alliances with emerging market partners are set to increase tremendously over the coming decades and more information will be available concerning cross-border alliances with partners in these emerging countries, more research can be done on the influence on partner selection criteria of the level of economic development of potential partners' countries.

6. RESEARCH LIMITATIONS AND FUTURE RESEARCH

This paper has underlined that it is essential to include functional objectives of alliances when studying partner selection criteria. In addition, it has explored the potential influence of the economic context on partner selection criteria. It focused on the human health applications of biotechnologies due to the dependence of this sector on alliances; however, the sector may not be representative of other industries due to particular constraints and needs. The sample size, while allowing rich data collection, limits the conclusions which can be drawn. Future empirical research on a larger group of firms, involved in a variety of developed and emerging markets, would be appropriate, as well as an examination of the relative importance of criteria in the decision-making process related to particular functional objectives.

Future longitudinal studies should trace the adjustment in managerial practices as they become more familiar with emerging markets, and as emerging countries develop and become less dependent on foreign partners. Case studies may be appropriate to delve deeper into the evaluation process, its evolution over multiple alliances, and to explore cultural dimensions which may influence the process. Finally, the criterion of proximity raised by respondent firms but not covered by the resource-based theoretical and empirical literature should be deepened through the light of incremental theories and studies covering the concepts of physical and psychological distance.

7. PRACTICAL IMPLICATIONS

The functional objective of the alliance is important when choosing partner selection criteria. The use of a limited number of selection criteria, relying on criteria that do not relate directly to the function, the context, or the quality of the partner may lead to suboptimal partner choice, unprofitable investment, and strategic delays in technology and international development. Especially for Marketing alliances, managers are advised to examine their current method of evaluating potential partners and to ensure inclusion of strategic, partner-related criteria in addition to those related to the market. For example, separating country, industry, and market attractiveness analysis from partner evaluation will undoubtedly lead to the generation of a greater variety of criteria directly related to the partner and the tasks which they are to perform. In addition, factors believed to be more important for future success from an organizational perspective should be given priority in the evaluation process. Finally, biotechnology associations and government trade promotion programs may use study results to help firms develop a more sophisticated evaluation framework for international partnerships.

Ethical Approval: All procedures performed in studies involving human participants were in accordance with the ethical standards of the institution and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

8. REFERENCES

- Barney J (1991) Firm resources and sustained competitive advantage *Journal of Management* 17:99-120
- Barney J (1995) Looking inside for competitive advantage *Academy of Management Executive* 9:48-61
- Barney J, Wright M, Ketchen DJ (2001) The resource-based view of the firm: Ten years after 1991 *Journal of Management* 27:625
- Baum JAC, Silverman BS (2004) Picking winners or building them? Alliance, intellectual, and human capital as selection criteria in venture financing and performance of biotechnology startups *Journal of Business Venturing* 19:411-436
- Berkrot B, Blanchier G (2010) Progression attendue du marché de l'industrie pharmaceutique. (www.nouvelobs.com), citing IMS Health (www.imshealth.com). Accessed October 10 2010
- Bingham C (2009) Oscillating improvisation: How entrepreneurial firms create success in foreign market entries over time *Strategic Entrepreneurship Journal* 3:321
- Brouthers KD, Brouthers LE, Werner S (2003) Transaction cost-enhanced entry mode choices and firm performance *Strategic Management Journal* 24:1239-1248
- Buckley PJ, Casson MC (1996) An economic model of international joint venture strategy *Journal of International Business Studies* 27:849-876
- Chandra Y, Coviello N (2010) Broadening the concept of international entrepreneurship: 'Consumers as International Entrepreneurs' *Journal of World Business* 45:228-236 doi:10.1016/j.jwb.2009.09.006
- Colombo MG, Grilli L, Murtinu S, Piscitello L, Piva E (2009) Effects of international R&D alliances on performance of high-tech start-ups: a longitudinal analysis *Strategic Entrepreneurship Journal* 3:346-368
- Coombs JE, Deeds DL (2000) International alliances as sources of capital: Evidence from the biotechnology industry *Journal of High Technology Management Research* 11:235-253
- Coviello NE (2006) The network dynamics of international new ventures *Journal of International Business Studies* 37:713-731 doi:10.1057/palgrave.jibs.8400219
- Coviello NE, Munro HJ (1997) Network relationships and the internationalization process of small software firms *International Business Review* 6:361-386
- Cuervo-Cazurra A (2011) Selecting the country in which to start internationalization: The non-sequential internationalization model *Journal of World Business* 46:426-437 doi:10.1016/j.jwb.2010.10.003
- Cumming DJ, Fischer E (2012) Publicly Funded Business Advisory Services and Entrepreneurial Outcomes *Research Policy* 41:467-481
- Cumming DJ, Fischer E, Peridis T (2015) Publicly Funded Business Advisory Services and Entrepreneurial Internationalization *International Small Business Journal* 33:824-839
- Cumming DJ, Siegel D, Sapienza H, Wright M (2009) International Entrepreneurship: Managerial and Public Policy Implications *Strategic Entrepreneurship Journal* 3:283-296
- Cyrino AB, Barcellos EP, Tanure B (2010) International trajectories of Brazilian companies: Empirical contribution to the debate on the importance of distance *International Journal of Emerging Markets* 5:254-265
- Dacin MT, Hitt MA, Levitas E (2001) Selecting Partners for Successful International Alliances: Examination of U.S. and Korean Firms *Journal of World Business* 32:3-16
- Daunais J-P (1992) L'entretien non-directif. In: Gauthier B (ed) *Recherche sociale : de la problématique à la cueillette de données*. Presses de l'Université du Québec, Sillery, pp 249-275
- Deeds DL, Hill CW (1996) Strategic alliances and the rate of new product development: An empirical study of entrepreneurial biotechnology firms *Journal of Business Venturing* 11:41-55
- Delerue H, Lejeune A (2012) Internationalization of biotechnology start-ups: Geographic location and mimetic behaviour *International Small Business Journal* 30:388-405 doi:10.1177/0266242611402565
- Dong L, Glaister KW (2006) Motives and partner selection criteria in international strategic alliances: Perspectives of Chinese firms *International Business Review* 15:577-600
- Ernst&Young (2009a) The 2009 Ernst & Young business risk report: Life sciences.
- Ernst&Young (2009b) Beyond borders: Global biotechnology report 2009.
- Ernst&Young (2010) Beyond borders: Global biotechnology report 2010.
- Fang E (2011) The Effect of Strategic Alliance Knowledge Complementarity on New Product Innovativeness in China *Organization Science* 22:158-172

- Fernhaber SA, Li D (2013) International exposure through network relationships: Implications for new venture internationalization *Journal of Business Venturing* 28:316-334 doi:10.1016/j.jbusvent.2012.05.002
- Fink M, Harms R (2012) Contextualizing the relationship between self-commitment and performance: Environmental and behavioural uncertainty in (cross-border) alliances of SMEs *Entrepreneurship and Regional Development* 24:161-179
- Freeman S, Hutchings K, Lazaris M, Zyngier S (2010) A model of rapid knowledge development: The smaller born-global firm *International Business Review* 19:70-84
- Geringer MJ (1991) Strategic Determinants of Partner Selection Criteria in International Joint Ventures *Journal of International Business Studies* 22:41-63
- Hamel G, Prahalad CK (1995) *La conquête du futur*. InterEditions, Paris
- Hendry C, Brown J (2006) Organizational networking in UK biotechnology clusters *British Journal of Management* 17:55-73
- Hitt MA, Ahlstrom D, Dacin MT, Levitas E, Svobodina L (2004) The Institutional Effects on Strategic Alliance Partner Selection in Transition Economies: China vs. Russia *Organization Science* 15:173-185
- Hitt MA, Dacin MT, Levitas E, Arregle J-L, Borza A (2000) Partner selection in emerging and developed market contexts: Resource-based and organizational learning perspectives *Academy of Management Journal* 43:449-467
- Hitt MA, Nixon RD, Clifford PG, Coyne KP (1999) The development and use of strategic resources. In: Hitt MA, Clifford PG, Nixon RD, Coyne KP (eds) *Dynamic strategic resources: Development, diffusion and integration*. Wiley, Chichestershire, England, pp 1-14
- Hitt MA, Tyuler BB, Hardee C, Park D (1995) Understanding strategic intent in the global marketplace *Academy of Management Executive* 9:12-19
- Huber GP, Power DJ (1985) Retrospective reports of strategic-level managers: Guidelines for increasing accuracy *Strategic Management Journal* 6:171-180
- Hurmerinta-Peltomäki L (2004) Conceptual and methodological underpinnings in the study of rapid internationalizers. In: Jones MV, Dimitratos P (eds) *Emerging Paradigms in International Entrepreneurship*. Edward Elgar, Cheltenham/Northampton, pp 64-88
- Ireland RD, Hitt MA, Vaidyanath D (2002) Alliance management as a source of competitive advantage *Journal of Management* 28:413-446
- Jacob J, Belderbos R, Gilsing V (2013) Technology alliances in emerging economies: persistence and interrelation in European firms' alliance formation *R & D Management* 43:447-460
- Johanson J, Mattson L-G (1988) Internationalisation in industrial systems – A network approach. In: Hood N, Vahlne JE (eds) *Strategies in Global Competition*. Croom Helm, London, pp 287-314
- Koot WTM (1988) Underlying dilemmas in the management of international joint ventures. In: Contractor F, Lorange P (eds) *Cooperative Strategies in International Business*. Lexington Books, Lexington, MA, pp 347-367
- Kuivalainen O, Saarenketo S, Puumalainen K (2012) Start-up patterns of internationalization: a framework and its application in the context of knowledge-intensive SMEs *European Management Journal* 30:372-385
- Lee H, Kelley D, Lee J, Lee S (2012) SME Survival: The Impact of Internationalization, Technology Resources, and Alliances *Journal of Small Business Management* 50:1-19
- Li J (2010) Global R&D Alliances in China: Collaborations With Universities and Research Institutes *IEEE Transactions on Engineering Management* 57:78-87 doi:10.1109/tem.2009.2028324
- Li L, Qian GM, Qian ZM (2012) Early internationalization and performance of small high-tech "born-globals" *International Marketing Review* 29:536-561
- Li N, Boulding W, Staelin R (2010) General alliance experience, uncertainty, and marketing alliance governance mode choice *Journal of the Academy of Marketing Science* 38:141-158
- Liesch PW, Welch LS, Buckley PJ (2011) Risk and Uncertainty in Internationalisation and International Entrepreneurship *Studies Review and Conceptual Development Management International Review* 51:851-873
- Looney W (2010) Strategies for Emerging Markets: Seven Keys to the Kingdom *Pharmaceutical Executive* 30:54-58
- Luo YD (1998) Joint venture success in China: How should we select a good partner? *Journal of World Business* 33:145-166

- March JG, Levitt B (1999) Organizational learning. In: March JG (ed) *The pursuit of organizational intelligence*. Blackwell, Oxford, England, pp 75-99
- McDougall PP, Oviatt BM (2000) International entrepreneurship: The intersection of two research paths *Academy of Management Journal* 43:902-906
- Melen S, Rovira Nordman E (2009) The internationalisation modes of Born Globals: A longitudinal study *European Management Journal* 27:243-254
- Meyer K, Wright M, Pruthi S (2009) Managing knowledge in foreign entry strategies: A resource-based analysis *Strategic Management Journal* 30:557-574
- Moen O, Bakas O, Bolstad A, Pedersen V (2010) International Market Expansion Strategies for High-Tech Firms: Partnership Selection Criteria for Forming Strategic Alliances *International Journal of Business and Management* 5:20-30
- Niosi J (2003) Alliances are not enough explaining rapid growth in biotechnology firms *Research Policy* 32:737-750
- Nordman ER, Tolstoy D (2014) Does relationship psychic distance matter for the learning processes of internationalizing SMEs? *International Business Review* 23:30-37 doi:10.1016/j.ibusrev.2013.08.010
- Ojala A (2009) Internationalization of knowledge-intensive SMEs: the role of network relationships in the entry to a psychically distant market *International Business Review* 18:50-59
- Oviatt BM, McDougall PP (1994) Toward a theory of international new ventures *Journal of International Business Studies* 25:45-64
- Pangarkar N, Klein S (2001) The impacts of alliance purpose and partner similarity on alliance governance *British Journal of Management* 12:341-354
- Peng MW (2001) The resource-based view and international business *Journal of Management* 27:803-829
- Powell WW (1998) Learning from collaboration: Knowledge and networks in the biotechnology and pharmaceutical industries *California Management Review* 40:228-240
- Powell WW, Brantley P (1992) Competitive cooperation in biotechnology: Learning through networks? In: Nohria N (ed) *Networks and organizations*. Harvard Business School Press, Boston, pp 366-394
- Powell WW, Koput KW, Smith-Doerr L (1996) Interorganizational collaboration and the locus of innovation: Networks of learning in biotechnology *Administrative Science Quarterly* 41:116-146
- Powell WW, White DR, Koput KW, Owen-Smith J (2005) Network dynamics and field evolution: The growth of interorganizational collaboration in the life sciences *The American Journal of Sociology* 110:1132-1207
- Reuer JJ, Lahiri N (2014) Searching for Alliance Partners: Effects of Geographic Distance on the Formation of R&D Collaborations *Organization Science* 25:283-298
- Reuer JJ, Tong TW (2010) Discovering Valuable Growth Opportunities: An Analysis of Equity Alliances with IPO Firms *Organization Science* 21:202-215
- Roijakkens N, Hagedoorn J (2006) Inter-firm R&D partnering in pharmaceutical biotechnology since 1975: Trends, patterns, and networks *Research Policy* 35:431-446
- Roijakkens N, Hagedoorn J, Van kranenburg H (2005) Dual market structures and the likelihood of repeated ties-evidence from pharmaceutical biotechnology *Research Policy* 34:235-245
- Rothaermel FT, Deeds DL (2006) Alliance type, alliance experience and alliance management capability in high-technology ventures *Journal of Business Venturing* 21:429-460
- Roy J-P (2012) IJV Partner Trustworthy Behaviour: The Role of Host Country Governance and Partner Selection Criteria *Journal of Management Studies* 49:332-355
- Sandberg S (2013) Emerging market entry node pattern and experiential knowledge of small and medium-sized enterprises *International Marketing Review* 30:106-129
- Sexton T (1997) The effects of partner and the relationship characteristics on alliance outcome *Academy of Management Journal* 40:443-461
- Sivakumar K, Roy S, Zhu J, Hanvanich S (2011) Global innovation generation and financial performance in business-to-business relationships: the case of cross-border alliances in the pharmaceutical industry *Journal of the Academy of Marketing Science* 39:757-776 doi:10.1007/s11747-010-0229-y
- Sleuwaegen L, Onkelinx J (2014) International commitment, post-entry growth and survival of international new ventures *Journal of Business Venturing* 29:106-120
- Stuart TE (1998) Network position and propensities to collaborate: An investigation of strategic alliance formation in a high-technology industry *Administrative Science Quarterly* 43:668-698

- Tang YK (2011) The Influence of networking on the internationalization of SMEs: Evidence from internationalized Chinese firms *International Small Business Journal* 29:374-398
doi:10.1177/0266242610369748
- Teece DJ, Pisano G, Shuen A (1997) Dynamic capabilities and strategic management *Strategic Management Journal* 18:509-533
- Teng BS, Das TK (2008) Governance structure choice in strategic alliances - The roles of alliance objectives, alliance management experience, and international partners *Management Decision* 46:725-742
- Veilleux S, Haskell N, Pons F (2012) Going global: how smaller enterprises benefit from strategic alliances *Journal of Business Strategy* 33:22-31
- Wernerfelt B (1984) A resource-based view of the firm *Strategic Management Journal* 5:171-180
- Yu J, Gilbert BA, Oviatt BM (2011) Effects of alliances, time, and network cohesion on the initiation of foreign sales by new ventures *Strategic Management Journal* 32:424-446
- Zhou L, Wu A, Barnes BR (2012) The Effects of Early Internationalization on Performance Outcomes in Young International Ventures: The Mediating Role of Marketing Capabilities *Journal of International Marketing* 20:25-45
- Zou H, Ghauri PN (2010) Internationalizing by learning: the case of Chinese high-tech new ventures *International Marketing Review* 27:223-244