



Internationalization and performance of small- and medium-sized enterprises

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ABSTRACT

In this paper, we examine the relationship between the degree of internationalization (DOI) and performance which represents a central issue in the international business literature. We argue that the substantial literature addressing this relationship is hampered by problematic measures for the key constructs (DOI and firm performance) and inconclusive results. Drawing from the internationalization process and location theories, we propose new measures for DOI (based on the dispersion of sales across geographic regions) and deploy a perceptual, multi-item measure of performance. Based on analyses of 94 survey responses provided by small- and medium-sized enterprises (SMEs) in Singapore, we find that that DOI positively impacts performance.

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1. Introduction

Does a higher degree of internationalization (DOI) lead to improved performance of small- and medium-sized enterprises (SMEs)?¹ This question is the focus of our study. Being one of the central issues in the international business literature, this topic has been the subject of several studies.² Sullivan's (1994) literature review, for instance, included as many as 24 studies on this topic with the earliest study published in 1971. Though the literature is voluminous, it is impossible to unequivocally conclude that higher DOI leads to better performance which led Thomas and Eden (2004) to conclude that "theoretical and

empirical gaps continue to bedevil researches" (studying the DOI–performance relationship).³ We believe that prior literature is hampered by two interrelated issues: problematic measures for key variables and inconsistent results (Annavarjula & Beldona, 2000). Below, we will discuss each of these issues briefly.

We submit that prior literature is hampered by issues with regard to the measures for the key dependent (performance) as well as independent variables (DOI) (Morgan & Katsikeas, 1997; Thomas & Eden, 2004). Specifically, we have two key concerns with the performance variable—the lack of uniformity across different studies and the narrowness of measures employed in individual studies. With regard to the lack of uniformity, prior studies have used a broad range of performance measures ranging from outcomes achieved in the product markets (such as sales growth; Grant, 1987; Siddharthan & Lall, 1982), to accounting measures (such as ROA, ROS and ROE; Daniels & Bracker, 1989; Kumar, 1984; Lu & Beamish, 2001; Riahi-Belkaoui, 1998; Rugman, Lecraw, & Booth, 1985; Shaked, 1986; Vernon, 1971) as well as market-

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¹ Prior literature has used the terms 'degree of multinationality' and 'degree of internationalization' interchangeably. In the interests of consistency, we will use the term 'degree of internationalization' throughout the paper.

² Admittedly, many of the studies examining the DOI–performance relationship have focused on large firms and not necessarily SMEs. The point we wished to make was that this is an important area that has received much research attention.

³ Text in parentheses added to improve clarity.

based measures (such as Beta and Risk-adjusted returns; Buhner, 1987; Collins, 1990; Goerzen & Beamish, 2003; Hughes, Logue, & Sweeney, 1975; Michel & Shaked, 1986). Though prior studies, collectively, account for a broad range of performance measures, individual studies, typically, have focused on one or two narrow measures.⁴ A key problem with narrow measures is that they may not be representative of firm performance, especially if objective function of the firm is broad (Goerzen & Beamish, 2003; Kennelly & Lewis, 2002). For instance, many SMEs, being in the early stages of their evolution, might place a strong emphasis on sales growth and an analytical focus on their profitability might understate the true performance achieved by these firms as well as distort the relationship between DOI and performance. Also many market measures used by prior studies (such as Jensen's alpha or Tobin's *q*) may not even be applicable to SMEs since many of these firms may not be listed on stock exchanges.

With regard to the key independent variable (DOI), though many prior studies have been quite consistent in its usage of proportion of foreign sales (or FSTS) as a measure of DOI (Collins, 1990; Qian, 1996, 1997b; Sambharya, 1995), the measure lacks validity since it is only a rough proxy for the DOI of a firm.⁵ A key problem with the FSTS measure is that it ignores the dispersion of foreign sales across markets, which has important implications for performance. In fact, Thomas and Eden (2004) argue that this dispersion (or breadth) may be a more important determinant of performance than the traditional depth measures (such as foreign sales/total sales). Consider, for instance, two firms deriving half of their sales from foreign markets—each will have a FSTS (and consequently DOI) ratio of 50% though one of them (say, firm A) might be addressing a single foreign market and the other one (say, firm B) 10 different markets. We submit that due to its limited market presence and consequent lack of diversity, firm A may be missing out on several key benefits of internationalization—such as smoothing of sales or earnings, opportunities to learn from a diverse set of circumstances including customers with unique requirements and competitors with unique strategies. On the other hand, due to uncorrelated economic cycles in the different countries, firm B may enjoy smoother sales and profits. Also, due to the diversity in the environment, it might have richer learning opportunities and there may be possibilities to leverage the learning across multiple markets, thus enhancing performance (Preece, Miles, & Baetz, 1998).

Another often deployed measure, involving counts of number of markets or foreign ventures (Delios & Beamish, 1999; Lu & Beamish, 2001; Ramaswamy, 1995) only partially addresses the issue. While it proxies one aspect of diversity, it does not differentiate between the markets, either in terms of the importance or penetration of the market (e.g., sales derived from the market) or in terms of

distance (psychic or otherwise) of the market versus the home country.

With lack of uniformity in the key dependent (performance) variable and doubtful validity of the independent (DOI, FSTS) variable, it is not surprising that the empirical results of prior studies have been inconclusive with some studies finding a positive impact of DOI (e.g., Daniels & Bracker, 1989; Geringer, Beamish, & daCosta Richard, 1989; Grant, 1987; Grant, Jammine, & Thomas, 1988; Qian, 1996, 1997a, 2002; Vernon, 1971), others finding no effect (e.g., Buckley, Dunning, & Pearce, 1977; Buhner, 1987; Geringer et al., 1989; Horst, 1973; Hoskisson & Hitt, 1990; Hughes et al., 1975; Kumar, 1984; Morck & Yeung, 1991; Rugman et al., 1985) and still others finding a negative effect (e.g., Collins, 1990; Kumar, 1984; Michel & Shaked, 1986; Shaked, 1986; Siddharthan & Lall, 1982).

Recently, scholars have predicted curvilinear relationships, again, with little consistency across studies. Using the organizational learning perspective, Ruigrok and Wagner (2003) predicted, and found support for, a U-shaped relationship. Other studies (Geringer et al., 1989; Gomes & Ramaswamy, 1999; Hitt, Hoskisson, & Kim, 1997) have theorized and found an inverted U-shaped relationship—primarily based on an increase in organizational costs (coordination and communication) as the diversity grows beyond the optimal level. Finally, another set of studies (e.g., Contractor, Kundu, & Hsu, 2003 for service firms and Riahi-Belkaoui, 1998) argued for and/or found (Thomas & Eden, 2004) a multi-stage sigmoid relationship.

In this study, we aim to address the above issues with the literature by: adopting more appropriate measures for DOI which take into account the dispersion in foreign sales and adopting a broader multi-item subjective measure of performance. About the first issue, Thomas and Eden (2004) argue that, with a few exceptions (e.g., Goerzen & Beamish, 2003), prior studies have paid less attention to country/geographic scope (a measure of breadth of foreign involvement) than depth of internationalization (e.g., foreign sales/total sales measure). Turning to our performance measure, in addition to being multi-faceted, it takes into account the objectives of the respondent firms.⁶ In summary, we believe that our study should lead to a more accurate understanding of the relationship between DOI and firm performance.

The contextual characteristics of our study should further increase its usefulness. Our focus on small- and medium-sized enterprises (SMEs) in Singapore can be contrasted with the prior literature's focus on large firms originating in the US and Europe (Geringer et al., 1989; Ghauri, 1999; Goerzen & Beamish, 2003). It is well recognized that SMEs make important contributions to the economy—a third of the value added in the case of Singapore (Business Times, November 1, 2004). In an increasingly interlinked and borderless economy, international expansion is no longer the domain of large firms and SMEs have been observed to internationalize, sometimes at an early stage of development (Karagozoglu & Lindell, 1998; Litvak, 1990; Oviatt & McDougall, 1994,

⁴ As many as 21 out of the 24 studies reviewed by Sullivan (1994) used either one or two performance measures.

⁵ In fact based on a comprehensive survey of literature on the topic, Sullivan (1994) concludes that "Despite its theoretical and practical centrality, estimating the DOI of a firm remains arbitrary."

⁶ We explicitly asked the respondents to rate (on a Likert scale) the degree of importance they attach to several different goals.

1999; Preece et al., 1998; Stray, Bridgewater, & Murray, 2001). In addition while the US and developed countries play a vital role in the world economy, the growing importance of other countries to international trade and investment is well recognized (Pangarkar & Lim, 2003). For instance, between 1993 and 2002, Singapore's FDI increased fivefold to S\$ 148 billion (roughly US\$ 90 billion; *Business Times*, February 3, 2005). In summary, we believe that prior literature's focus on large firms from developed countries needs to be supplemented with studies done in different contexts (Lu & Beamish, 2001).

The remainder of this paper is organized as follows. We begin by discussing the general arguments about the performance benefits of internationalization. We, then, go on to develop the key hypothesis to be tested by the study followed by a discussion regarding the methodological aspects of the study. The following section discusses the key results from the analyses of data. We conclude the paper by identifying the limitations of the study and the directions for further research.

2. Conceptual arguments and hypotheses development

Before developing the key hypotheses, we will discuss the general theory which informs us about the performance implications of internationalization. We first identify and summarize the arguments for the relationship between DOI and performance before zeroing in on the specific factors applicable to SMEs and how this relationship might apply to them.

2.1. Internationalization and firm performance

Prior literature is in broad agreement that internationalization has a positive impact on firm performance. Drawing from the literature on international and global strategies, we can identify three broad categories of benefits to internationalizing firms (Ghoshal, 1987). First, they can have greater cost efficiencies primarily due to a greater volume of business and the ability to exploit economies of scale (Hout, Porter, & Rudden, 1982). A highly internationalized firm, for instance, may be able to invest in a state-of-the-art manufacturing plant whereas a domestically focused rival may not be able to justify a similar investment based on its limited volume. Internationalized firms may also be able to site value creation activities in particular locations (e.g., labor intensive activities in low-wage countries or software development in India) so as to minimize their costs (Ghoshal, 1987; Thomas & Eden, 2004). Taxes may be reduced by charging appropriate transfer prices to sister units. Internationalized firms can also enjoy additional flexibility due to the possibility of arbitrage (Allen & Pantzalis, 1996; Kogut, 1985). Cross-national differences, for instance, may also be exploited dynamically—by shifting production volume or locations in response to changes in wage, exchange and tariff rates. Another key aspect of flexibility includes the ability to launch attacks on geographically focused rivals or to fend-off rivals' attacks. Hamel and Prahalad (1985) identify the opportunities for cross-subsidization across different markets (e.g., launching a price war in a key rival's

home or major market) as one of the core benefits of a global strategy. An international firm also benefits from the diversity of environments it operates in (Ghoshal, 1987; Rugman, 1979). It enjoys tremendous learning opportunities while satisfying the diverse customer needs and responding to different competitors in international markets (Kostova & Roth, 2002; Zahra, Ireland, & Hitt, 2000). If the MNC, in fact, learns from these diverse stimuli, it can transfer this learning at little additional costs to its other affiliates, enhancing its performance in the process. The Xerox Corporation, for instance, was able to learn about Total Quality Management from its Japanese joint venture, Fuji Xerox, and enhance its overall competitiveness.

On the flip side, MNCs may face foreign exchange risks (Thomas & Eden, 2004). Transaction costs theory suggests that internationalization also poses stiffer challenges to the management and can lead to increased coordination and communication costs. Much of the literature, however, is in agreement that the benefits of internationalization outweigh the increased costs and hence should impact firm performance positively (Ghoshal, 1987).

Many prior studies have found that international asset diversity enhances firm performance—that is the benefits of a diverse international presence outweigh costs (Allen & Pantzalis, 1996; Delios & Beamish, 1999; Gomes & Ramaswamy, 1999). Many of the above arguments, however, have been proposed for large, established firms. In the following discussion, we examine the applicability of these arguments to SMEs.

2.2. Internationalization and SME performance

While the literature is in agreement that internationalization will benefit the performance of many firms, the relationship is less clear-cut for SMEs mainly due to concerns about their internal constraints and ability to compete in international markets. As a variety of studies (e.g., Lu & Beamish, 2001; Oviatt & McDougall, 1994; Smith, Gannon, Grimm, & Mitchell, 1988) have noted, SMEs are not simply smaller versions of traditional firms and exhibit differences in ownership, resources, organizational structures and management systems.

Prior literature has identified the numerous constraints faced by SMEs in international expansion. Typically SMEs do not perform global scanning and hence might lack the information necessary for exploiting the international opportunities (Buckley, 1999). The information scarcity may be attributable to the shortage of managerial resources (Qian, 2002), manifested in: the absence of specialist executives to manage international operations or a hierarchy of managers through which decisions can be vetted or sufficiently developed administrative procedures (Aharoni, 1966; Buckley, 1999; Van Hoorn, 1979). Karagozoglu and Lindell (1998) found that managerial expertise and competence, and the lack of information were the top two difficulties faced by small technology-based firms in internationalization. Buckley (1999) argues that, due to constraints of management time, smaller firms frequently take short-cuts in decision-making and information gathering, which can be disastrous. Internationalization also increases the requirements for coordination

and communication among different units within the firm as well as other parties located in different geographic zones (Qian, 2002), thus further stretching the thin managerial resources of many SMEs. In addition, any foreign market initiative will take a larger proportion of resources of a SME than a large firm. In the event of failure of the particular initiative, the impact on a SME may be greater, which increases the risk levels of SMEs (Buckley, 1999; Lu & Beamish, 2001). Finally, many SMEs suffer scale and resource disadvantages compared to their global rivals, adversely impacting the likelihood of success of their internationalization initiatives (Yip, Biscarri, & Monti, 2000).

Though SMEs face several constraints and risks in internationalizing, they can also benefit from internationalization in several different ways. They may be able to exploit a similar market niche in different countries, thus enhancing their revenue as well as profit potential (Luostarinen, 1979). Jollibee, a fast food firm from the Philippines, for instance, has targeted Filipino expatriates in several different countries including the US and Hong Kong. Additional volume gained from the foreign markets might be particularly valuable for attaining economies of scale, especially if volume gains were constrained in the domestic market due to saturation or other issues such as well-entrenched competitors. Higher volumes might allow SMEs to recoup R&D costs and devote sufficient resource allocation to this key function to sustain competitiveness (Kobrin, 1991). By becoming international, SMEs may also be able to provide better service to their MNC clients and, in the case of foreign direct investment, avoid import tariffs. Icon Medialab, a Swedish internet-services (e consulting) firm, for instance, was able to get high-profile MNC clients such as Siemens, HP and Sony due to its ability to provide its services across multiple countries (Billou & Birkinshaw, 2001). A variety of incentives from the home as well as host governments may be available for internationalizing which could further enhance the performance of SMEs. Finally, the boost to profitability due to international operations may be greater on a proportional basis for SMEs than for their larger counterparts (Loth & Parks, 2002).

In summary despite the constraints and challenges faced, SMEs are likely to enhance their performance through greater internationalization (Loth & Parks, 2002). Hence,

Hypothesis 1. Higher levels of DOI will lead to better SME performance.

We are well aware of the possibility that too much internationalization can have a negative effect on performance since very high levels of DOI can raise the transaction as well as coordination costs (Buckley & Casson, 1976; Geringer et al., 1989; Tallman & Li, 1996; Thomas & Eden, 2004). The possibility of reversal in performance may be particularly strong for SMEs since they might lack the managerial resources as well as the experience to bring about the coordination in an efficient fashion (Qian, 2002). We will test for the existence of a non-linear relationship by introducing a squared term in the regression estimation.

3. Methods and measures

3.1. Data collection

We used a survey instrument to collect information about the key constructs. Our survey instrument consisted of six sections with the following headings: management profile, organizational capabilities, external environment, degree of internationalization, firm performance and general information. We consulted the prior literature for wording of specific questions and used a five-point Likert scale for the responses. We treated the Singapore SME 500 listing provided by DP Information services (in partnership with Ernst and Young and International Enterprise Singapore (a government agency)) as the sampling frame for mailing the surveys. We also introduced a lag by asking firms to provide information about their internationalization for the year 2003 (the survey was carried out in mid-2005) and performance for the year 2004.

3.2. Control variables

3.2.1. Firm size

Intuition would suggest that, due to greater resource availability, larger firms should exhibit higher DOI (due to available managerial and financial resources) as well as performance (due to economies of scale, Thomas & Eden, 2004). Prior empirical work on the determinants of internationalization suggests a moderate positive relationship between size and DOI (Miesenbock, 1988), though recent studies (Calof, 1994) have found no relationship. We included size as a control variable though we find it difficult to predict the direction of its impact either on DOI or on performance.

3.2.2. Capabilities

The stronger the capabilities of SMEs, the greater will be the competitive advantage enjoyed over existing or potential local competitors and hence the better their performance (Dunning, 1973; Oviatt & McDougall, 1994). Firms with stronger capabilities (ownership advantages) may be in a better position to bargain with host governments for tax breaks or other concessions (Lecraw, 1984; Vernon, 1983) and attract more capable business partners, further enhancing their performance.

3.2.3. Host market attractiveness

The benefits derived by SMEs from internationalization may critically depend on the characteristics of the environment in which the international business is being carried out. Attractive environments, characterized by factors such as high market demand and/or growth (market potential), low investment risk, favorable attitude of the host government towards foreign firms and high political and economic stability, provide firms ample opportunities to grow and also to achieve scale economies (Agarwal & Ramaswami, 1992). Low political risk means that firms need to expend fewer resources to counter government-induced discontinuities, allowing them to focus on business and competitive issues, and hence

achieve better performance (Child & Markoczy, 1993). Incentives from the local government in the form of cash, tax breaks or similar can, similarly, enhance the performance of SMEs. There may also be a second-order effect. If SMEs gain preferential treatment in terms of access to these incentives, they might improve their competitiveness versus other rivals who were not able to garner similar incentives either due to lower levels of internationalization or due to absence from a particular market.

On the other hand, several unattractive (to the foreign firm) location characteristics might also hamper SME performance. Lack of infrastructure creates uncertainties with regard to cross-border technology transfer, and negatively impacts the venture as well as parent performance (Isobe, Makino, & Montgomery, 2000). Prior research has found that the performance of foreign ventures is lower in challenging environments (Beamish, 1985; Merchant & Schendel, 2000). In summary, we believe that focus on attractive host markets will enhance SME performance.

3.3. Operational measures for variables

3.3.1. Past measures of DOI

In the first section of the paper, we highlighted our key concern with the operational measure (used by a large majority of prior studies) for the DOI variable—specifically the measure's inability to account for the dispersion in foreign sales and its implications for firm performance.

In his study, Sullivan (1994) suggested a measure based on a linear combination of five variables—foreign sales/total sales, foreign assets/total assets, overseas subsidiaries/total subsidiaries, top managers' international experience/total experience and psychic dispersion of international operations. Though Sullivan's (1994) measure is more comprehensive than a measure based purely on firm sales, it requires rich information regarding a firm's operations (e.g., the levels of experience of managers, number of domestic as well as foreign subsidiaries) which may be particularly difficult to obtain for SMEs, some of whom (e.g., privately held firms) face minimal disclosure requirements. Hence we use data regarding sales derived from different geographic regions to construct our DOI measures. Similar to Reuber and Fischer (1997), we use two different measures of DOI.

3.3.2. Proposed measures of DOI

Our first measure is a combination of the traditional proportion of foreign sales variable and the dispersion of foreign sales across geographic regions (see Table 1).

$$DOI_1 = \frac{\text{proportion of foreign sales}}{(\text{proportion of sales in SE Asia})^2 + (\text{proportion of sales in rest of Asia})^2 + (\text{proportion of sales in Europe})^2 + (\text{proportion of sales in Americas})^2 + (\text{proportion of sales in rest of the world})^2}$$

The denominator of our proposed measure is similar to the Herfindahl–Hirschman index which has been

frequently used in the economics literature for measuring the concentration of markets. Grant et al. (1988) also used a similar measure for diversity. At this point it may also be useful to point out that the proportions in the denominator add up to 1.0—that is, the proportions are based on foreign sales and not total sales.

We submit that since it accounts for both the breadth (dispersion of foreign sales) and the depth of multinational operations (foreign sales) (Thomas & Eden, 2004), our measure should be preferred over many measures used by prior research. Studies from several different perspectives have emphasized the importance of location choices in international strategy/business (e.g., Goerzen & Beamish, 2003) and how they might influence the performance of MNCs. Dunning (1998) argued that location was a neglected factor in the theories of MNCs and that international locations have become strategically important to competitiveness due to their potential as sources of new learning and knowledge creation. DeCarolis and Deeds (1999), similarly demonstrated the importance of location as a significant predictor of firm performance especially when there is spatial clustering of innovative activities and knowledge networks. Sundaram and Black (1992) have suggested that two of the key considerations in the analysis of MNEs are the number of geographic locations in which the firm operates and the extent to which these country environments vary. Unlike the FSTS measure, our proposed measure effectively uses the location information, as shown below.

Let us illustrate the key differences between our proposed measure and the traditional FSTS measure with a few examples.

- Case 1: Firm A derives all of its sales from domestic markets; the DOI_1 for firm A will assume a value of 0 (same value as the FSTS variable).
- Case 2: Firm B derives 50% of sales from a single foreign market and the rest from domestic market; $DOI_1 = 0.50 / [(1)^2] = 0.5$ (same value as the FSTS variable).
- Case 3: Firm C derives 50% of sales from five different foreign markets (spread equally); $DOI_1 = 0.50 / [(0.2)^2 + (0.2)^2 + (0.2)^2 + (0.2)^2 + (0.2)^2] = 0.50/0.2 = 2.5$ (the FSTS variable has a value of 0.5).

It is evident from the above examples that even with the same % of foreign sales (Case 2 versus Case 3), our measure will lead to different values of DOI_1 according to the dispersion of sales across different countries/geographic regions. Our measure also combines two out the three dimensions (depth and breadth) identified by Thomas and Eden (2004) and hence is more comprehensive than a simple count of number of countries or subsidiaries (Delios & Beamish, 1999; Lu & Beamish, 2001; Ramaswamy, 1995).

We will also employ an alternative measure, which is grounded in the psychic distance and location perspectives. According to the psychic distance perspective, firms entering new markets face uncertainty, and they will try to gain knowledge about new markets to minimize this uncertainty (Johanson & Vahlne, 1977). While objective market knowledge can be obtained from secondary sources and general knowledge about international

Table 1
Operational measures for variables

Construct	Measure
DOI ₁	$(1 \times \% \text{ of sales from SE Asia}) + (2 \times \% \text{ of sales from rest of Asia}) + (3 \times \% \text{ of sales from rest of the world})$
DOI ₂	
Size	Foreign sales/[$(\% \text{ of sales from SE Asia})^2 + (\% \text{ of sales from the rest of Asia})^2 + (\% \text{ of sales from Europe})^2 + (\% \text{ of sales from the Americas})^2 + (\% \text{ of sales from the rest of the world})^2$] Sales level
Performance (Cronbach's alpha = 0.881)	Composite variable that is a summation of the following terms: multiplicative interaction of the importance attached to each of the following measures and the level of satisfaction with regard to each of the performance measures Return on sales Growth of sales Foreign profits as a % of total profits Growth of profits Return on assets Experience or knowledge gained as a result of entering foreign markets
Host country attractiveness (Cronbach's alpha = 0.835)	Responses to the following questions on a five-point Likert scale (strongly agree to strongly disagree) We wished to tap into the strong overseas demand for our firm's products/services We were attracted by the strong potential (future market growth) offered by the foreign markets We wished to take advantage of the low cost of production in the foreign markets
Capabilities (Cronbach's alpha = 0.881)	Responses to the following questions on a five-point Likert scale (strongly agree to strongly disagree) Our firm devotes resources to developing new products for overseas markets Our firm has the managerial capabilities to handle international expansion Our firm is financially capable of handling international expansion, our firm has a strong focus on research and development Our firm does market research to seek out overseas opportunities Our firm has a strong brand reputation

business practices transferred from other international subsidiaries or affiliates, experiential market-specific knowledge (about the specific market and its characteristics: business climate, culture, structure of the market system, and knowledge about individual customers) can be acquired by operating within the country or through networks with local partners, agencies (Carlsson, Nordegren, & Sjolom, 2005). Since firms usually have better knowledge about opportunities and business alternatives in their immediate surroundings than about far away markets, their ability to gain experiential market knowledge will decrease with the 'degree of foreignness', commonly referred to as the psychic distance (Johanson & Vahlne, 1977; Petersen & Pedersen, 1997).

Though higher psychic distance might slow down the learning with regard to operating in a particular market and have a potentially negative impact on a firm's economic performance (Goerzen & Beamish, 2003; Vermeulen & Barkema, 2002), it can also be a source of synergies (Gomes & Ramaswamy, 1999). Dissimilar markets can provide significant opportunities for learning which, in turn, can lead to enhanced competitiveness. Several American firms, including Xerox and Procter and Gamble, found the Japanese environment to be different and challenging, yet were able to transfer the valuable lessons learned in the Japanese market to their other operations (Ghoshal, 1987). The economic cycles in psychically distant countries are also likely to be less correlated with each other versus psychically close

countries providing a firm with a diverse portfolio (including psychically distant markets) better stability of earning and revenues.⁷

In summary, psychic distance can have positive as well as negative impact on the performance of MNCs. We believe that in an increasingly competitive, knowledge-based environment and volatile world, the positive effects of operating in psychically distant countries will outweigh the challenges due to operating in these distant countries—in other words a firm with a diverse portfolio of markets, including some psychically distant countries, will outperform another whose portfolio consists of mostly psychically near markets.

As a first step towards calculating this measure, similar to other studies such as Preece et al. (1998), Clark and Pugh (2001) and Hitt et al. (1997), we arranged the different geographic regions in the following order (increasing psychic distance): SE Asian countries other than Singapore, Asian countries outside SE Asia and countries in the rest of the world.⁸ A key reason for putting other SE Asian countries as being psychically nearest to Singapore is that

⁷ The Asian economic crisis of 1997 and 1998, for instance, negatively impacted all the SE Asian economies though the magnitude of the impact differed across countries. The US economy, on the other hand, turned in a robust performance during those years.

⁸ We are aware that the rest of the world category seems rather broad. The SMEs in our sample, however, derived a very small proportion of sales from the rest of the world and hence we did not deem it necessary to create finer categorization of this broad category.

many SE Asian countries have strong economic and cultural linkages as well as a shared history. Singapore, for instance, was a part of Malaysia until 1965 and has a sizeable Malay population which forms the majority ethnic group in Malaysia and Indonesia. The overseas Chinese (who constitute majority of the population in Singapore) are a major force in the business sectors of many SE Asian countries including Malaysia, Indonesia, Philippines and, to a lesser extent, Thailand. Economically, the SE Asian countries have formed a trading block—the ASEAN Free Trade Area. Singapore is among the largest foreign investor in countries such as Indonesia and Vietnam (Pangarkar & Lim, 2003). We further believe that the psychic distance between Singapore and other Asian countries will be less than Singapore and rest of the world. Singapore has cultural ties with India and China—due to its ethnic mix (Chinese and Indian populations). Economically also, Singapore has strong ties with these countries with significant cross-investment. The Singapore Stock Exchange, for instance, boasts a number of listings of China-based firms.

We computed our second measure of DOI as follows⁹:

$$\text{DOI}_2 = (1 \times \% \text{ of sales from SE Asia}) + (2 \times \% \text{ of sales from the rest of Asia}) + (3 \times \% \text{ of sales from the rest of the world})$$

3.3.3. Operational measures for the control and dependent variables

We operationalized the host market attractiveness through three different items: strong demand, high potential (=future market growth) and low cost of production. Prior literature has argued that to be successful in international business, firms require several different types of capabilities (Ghoshal, 1987; Grant et al., 1988). We used five different items to assess the capabilities of firms—managerial and financial capabilities to handle international expansion, R&D focus, market research to seek out overseas opportunities and strong brand reputation.

Cognizant of prior critiques about implications of the choice of performance measure on the relationship between diversity and performance,¹⁰ we decided to deploy a broad composite measure which would account for the complex set of goals that SMEs in our sample might have (e.g., some might value growth in sales over profits). We deployed six items (ROS, growth in sales, foreign profits, growth in profits, ROA, experience and knowledge gained from foreign operations) to assess performance. We multiplied the score with respect to each dimension with the importance attached to it, to arrive at a single measure. While the composite measure has an 'aggregation bias' it is also hoped that it is a more accurate indicator of performance. There is also a rich tradition in prior literature of using the composite measures (e.g., Carlsson et al., 2005; Child & Yan, 2003; Florin, Lubatkin, & Schulze,

2003; Glaister & Buckley, 1998) for the performance variable.

4. Results and discussion

Almost 11% (54 out of the 500) surveys were returned by postal services due to incorrect address, business liquidation or similar issues and seven SMEs were domestically focused. We received 94 complete and usable responses from the remaining population of 439 SMEs, giving us a response rate of 21.4%. While the response rate appears to be low, we believe that is acceptable given that most SMEs are privately held¹¹ and the survey tradition is less well-established in Asia (Pangarkar & Klein, 2004). Our response rate is also comparable to prior studies focusing on Asia (Ding, 1997; Isobe et al., 2000). We were able to eliminate the possibility of common method bias since a factor analysis of all the items revealed several different factors. We also compared the early versus the late responses with respect to size and found no statistically significant difference—thus reducing the possibility of non-response bias.

The SMEs in our sample were internationally oriented with average scores for knowledge regarding international business practices and regulations as well as foreign markets and cultures of higher than 3—the midpoint of the scale. Thus, despite size constraints, the SMEs appear to be knowledgeable about international opportunities. This knowledge is most likely derived from management's trips abroad since a majority of SMEs in the sample reported that their management makes more than five foreign trips a year.

On the average, the SMEs in our sample derived 54.7% of their sales from Singapore. Among the different foreign regions, SE Asia accounted for the largest percentage (21.9%) followed by the rest of Asia (12.3%). The SMEs in our sample did not focus on Europe, the Americas or the rest of the world with these regions collectively accounting for just over 11% of sales. There may be two explanations for this result. First, psychic distance might be a good explanation for expansion patterns of Singapore SMEs, with these firms being more comfortable in the culturally similar and geographically proximate markets of Asia in general and SE Asia in particular (Andersson, 2004; Johanson & Vahlne, 1977, 1990). Another explanation might lie in the fact that the internationalization of Singapore firms is a recent phenomenon and the Asian countries have provided a rather attractive environment during this timeframe to potential investors, especially in terms of growth rates (Pangarkar & Lim, 2003). In this respect, there is a similarity between the firms in our sample and the Born Global firms.

Relative to other measures, respondents reported higher satisfaction levels with the learning achieved from international markets, since the score for this dimension (3.33/5.0 versus 2.62/5.0 for the lowest rated dimension of profit growth) was significantly ($p > 1\%$) greater than the score for any other dimension. The degree of importance

⁹ The weights (1, 2 and 3) are arbitrarily assigned and we will test the robustness of our results to alternatives.

¹⁰ Grant et al. (1988), for instance, note that "Findings concerning relationship between diversity and profitability appear to be susceptible to choices concerning profitability measures."

¹¹ Since private firms face minimal disclosure requirements, they are reluctant to divulge details about their strategies or performance.

Table 2
Correlation matrix

	1	2	3	4	5	6	7	8	9	10
Performance (1)	1									
Size (2)	0.190	1								
DOI ₂ (3)	0.286*	0.132	1							
DOI ₁ (4)	0.247	0.301*	0.691**	1						
Host market attractiveness (5)	0.329*	0.237	0.285*	0.250	1					
DOI ₁ × capabilities (6)	−0.116	−0.106	−0.360**	−0.408**	−0.318*	1				
DOI ₁ × host market attractiveness (7)	0.048	0.012	−0.160	−0.266*	−0.283*	0.428**	1			
DOI ₂ × host market attractiveness (8)	0.012	−0.150	−0.156	−0.371**	−0.316*	0.456**	0.735**	1		
DOI ₂ × capabilities (9)	−0.104	−0.273*	−0.276*	−0.565**	−0.321*	0.743**	0.412**	0.658**	1	
Capabilities (10)	0.414**	0.075	0.105	0.188	0.532**	−0.277*	−0.327*	−0.374**	−0.335**	1

* Correlation is significant at the 0.05 level (two-tailed).

** Correlation is significant at the 0.01 level (two-tailed).

attached to the various performance measures was rather uniform.

The multi-item measures in our study emerged as expected with reliabilities (Cronbach's alphas) of all measures easily exceeding the customary cut-off of 0.7 (see Table 1). Table 2 shows the correlation matrix for the variables used in the regression analyses. It is apparent from these tables that we have one case of high collinearity (capabilities and host market attractiveness) and a few other milder cases where the correlation coefficient was below 0.4.¹² We will estimate the variance inflation factors (VIFs) to examine whether multicollinearity has any impact on our coefficient estimates.

Turning to the results of the regression analyses, we could not include the squared terms for the DOI variables due to their high multicollinearity with the main effects variables. Our models performed quite well (see Table 3). The *F* statistics are highly significant and the adjusted *R*² values are within the acceptable range, especially considering the complex nature of the dependent variable and the parsimony of our models. The maximum VIF values were well within acceptable range suggesting that multicollinearity does not have a major impact on our estimates. We will now examine the coefficients for the individual variables and examine whether they support our key hypothesis.

Hypothesis 1 which predicted that higher DOI will lead to improved firm performance was strongly supported with significant coefficients for both measures of the DOI variable. In addition, the coefficient for the capabilities variable had significant coefficients in both the regression analyses in Table 3. Host market attractiveness, which might help foreign MNC firms' performance, does not seem to have a standalone impact since the coefficients in both regression estimations are insignificant.

We had also included interaction variables between DOI and host market attractiveness and DOI and capabilities to test whether the effects of these variables were additive. The regression coefficients of the interaction variables between DOI and the market attractiveness were significant though the market attractiveness variable, by itself, was not significant. Thus highly internationalized

firms seem to be in a much better position to leverage the opportunities provided by attractive international markets. The regression coefficients for the interaction variables between DOI capabilities were, however, not significant.

We also performed a variety of robustness checks. For the DOI₂ variable, we tried alternative weights for the different regions (instead of one for SE Asia, two for rest of Asia and three for the rest of the world). We also re-estimated the regressions with the unweighted composite measure of performance (unit weight to each of the performance criteria). The results, which are not reported here in the interests of parsimony, remained the same. Finally, we also re-estimated a set of 12 regressions with each of the performance measures as the dependent variable—six for each of the DOI measure. The coefficient for DOI₁ measure was significant in 5 out of the 6 regressions but the coefficient for the DOI₂ measure was significant in only two out of six regressions, suggesting that DOI₁ is a stronger predictor of performance than DOI₂.

5. Discussion

In this study, we were aiming to examine a relationship that is central to the International Business literature—between DOI and performance of the firm. We argued that the extensive literature on these topics had led to conflicting results, possibly due to inadequate measures. Our results support the central arguments of the present paper (and also much of the IB literature) that higher DOI leads to better performance. We believe that our result will inspire confidence in the existence of the relationship since we deployed a broader perceptual measure of performance and more valid measures of DOI, which take into account the dispersion of international sales across different countries. We also find some support for the notion that firms investing in more attractive environments exhibit better performance. Furthermore we find that the capabilities of SMEs influence the performance of internationalized firms.

Our results suggest that despite the several constraints faced by them, SMEs should indeed internationalize since the benefits due to internationalization seem to outweigh the 'costs'. The peculiarities of the Singapore context such as the limited size of the domestic market and the upward

¹² We have ignored the collinearity between main effects and interaction variables since it is quite expected.

Table 3
Results of regression analysis: determinants of SME performance

Variable	Model I	Model II
Constant	6.388* (2.631)	4.310 (2.970)
Size	0.000 (0.002)	0.000 (0.002)
Capabilities	1.806*** (0.601)	1.733*** (0.618)
Host market attractiveness	0.641 (0.692)	0.804 (0.669)
DOI ₁	0.019** (0.007)	Not included in the regression
DOI ₂	Not included in the regression	2.383** (1.051)
Interaction variable: DOI × host market attractiveness	0.019** (0.009)	1.953* (1.049)
Interaction variable: DOI × capabilities	0.001 (0.008)	0.464 (1.023)
F statistic	4.304***	3.785***
Adjusted R ²	0.284	0.250

Model 1: maximum value of VIF = 1.814 for the interaction variable between DOI × capabilities. Model 2: maximum VIF value of 1.474 for the host market attractiveness variable. Standard errors in parentheses.

* Significant at the 10% level.

** Significant at the 5% level.

*** Significant at the 1% level.

pressure on costs (e.g., due to labor shortage) provide stronger incentives for the Singapore SMEs to internationalize. SMEs from many other developing countries (e.g., Vietnam, Thailand or even India for some types of goods and services) may also face similar pressures despite having larger populations, since the purchasing power of consumers tends to be limited reducing the effective market size for many types of goods. As suggested by the literature on Born Global firms, creative strategies such as extensive usage of alliances might help the SMEs overcome their constraints, especially with regard to paucity of managerial resources (Oviatt & McDougall, 1994, 1999).

Among other results, we do find some indirect support for the psychic distance hypothesis in the sense that much of Singapore SMEs' international activities are concentrated in the culturally and geographically proximate regions of Southeast as well as broader Asia (Andersen, 1993; Clark & Pugh, 2001).

Interestingly, the respondents in our study indicated that learning new knowledge was a key benefit of internationalization. The prominence of this benefit also suggests that prior studies examining the relationship between internationalization and accounting measures of performance (such as ROA) might have understated the strength of the DOI–performance relationship since additional learning is not usually reflected in accounting statements, at least in the short run.

Our study has several managerial implications. First, our results suggest that, to enhance their performance, SMEs should internationalize aggressively. This conclusion is similar to much of the literature on Born Global firms which argues that some firms pursue internationalization at an early stage of development by deploying an innovative set of strategies such as extensive usage of alliances (Oviatt & McDougall, 1994, 1999). Without appropriate capabilities greater internationalization may not lead to better performance. Thus a key task for SMEs is to build up their capabilities in the areas such as branding and marketing, technology development, financing and other managerial capabilities useful for international expansion. It may also be important for the SMEs to address the issue of which comes first—capabilities or internationalization. We found some indirect evidence

that internationalization contributes towards the development of these capabilities. The additional learning gained from internationalization, for instance, may be useful for developing new products and technologies. Successful internationalization might enhance the brand in the home market also.

Our study suggests that SME managers should focus on leveraging the learning opportunities from their international presence—an area where they believe the benefits of internationalization to be the strongest. Interestingly this benefit of internationalization has been given more emphasis only recently and the traditional literature has tended to focus on benefits such as scale economies and the flexibility to shift production.

Prior studies (e.g., Ghoshal, 1987; Grant, 1987) argued that though internationalization provides several learning opportunities, capitalizing on these opportunities poses significant organizational challenges (Qian, 2002). SMEs typically, lack experienced specialist executives who might help them in accumulating the learning from their international ventures. We submit, however, that SMEs are in an advantageous position to capitalize on the learning opportunities in several other respects. Given the informal nature and small size of their organizations, it may be relatively easier to communicate, and obtain buy-in, of learning as an objective. In addition, the centralized nature of SMEs' decision-making might imply that they are in an excellent position to overcome some of the obstacles (such as the Not Invented Here syndrome) to leveraging and sharing of the knowledge acquired. Also, as Autio et al. (2000) have suggested, being unfettered by a bureaucratic culture and established routines, many SMEs may possess the learning advantages of newness.

6. Limitations and directions for further research

We acknowledge several limitations of our study. Firstly, we focus on the overall (firm-level) performance implications of internationalization but do not consider the performance attained by individual initiatives such as ventures in particular markets. A key assumption in our analysis is that, given the small size of SMEs, performance of individual initiatives (whether good or bad) will be

reflected in the performance of the overall firm. This assumption may be less valid in other settings, especially larger firms. Another limitation relates to the fact that we did not control for several firm characteristics such as the prior experience of top managers in internationalization. A third limitation refers to our inferences about causality. It is possible that better performing firms are able to pursue greater levels of internationalization, say by entering psychically distant markets. Though we attempted to introduce a time lag between the key independent and dependent variables, the nature of the survey data means that our conclusion about causality (higher DOI leading to better performance) must be viewed with caution, especially with regard to our DOI₂ measure. We would like to point out, however, that due to the weak performance of regressions with DOI₂ as the dependent variable, we were somewhat cautious about this set of results, in any case. Finally, our data was also cross-sectional and we cannot model dynamic effects within individual firms such as the performance implications of incremental internationalization or the learning effects due to internationalization which will imply that more experienced firms exhibit superior performance.

Our study suggests several directions for further research. Future research might examine the performance of individual internationalization initiatives and try to correlate it with the characteristics of the market (e.g., level of economic development and cultural and geographic proximity, among others) as well as the strategy adopted (e.g., mode of servicing the market, size or scale of the initiative). It may also be useful to study longitudinal effects in the internationalization process and examine whether the relationship is non-linear for particular firms. Initial internationalization, for instance, might produce little results as the firms learn to operate in diverse markets. Too much internationalization, on the other hand, might stretch the management capabilities of firms and negatively impact performance. While these effects can be investigated in a cross-sectional sample such as ours, we believe that longitudinal data is more appropriate for this kind of analysis. Finally, in addition to the overall degree of internationalization, future research might examine other aspects of global strategy—specifically how firms coordinate their strategies across international markets. Ex ante, we would expect that the extent of coordination would have an impact that is independent of, and in addition to, the impact of internationalization.

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