Born-International SMEs: BI-Level Impacts of Resources and Intentions

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ABSTRACT. The Katz and Gartner (1988) model describes four central properties of emerging organizations: resources, intention, exchange, and boundary. While designed as a general model for organizations, the approach has the potential to explain the early lives of "born-international" firms. In this study, boundary is used to define the central sampling frame. Two other properties, resources and intention, are evaluated in terms of their impact on the fourth property: exchange, measured as a firm's export growth and intensity. Given the inherent presence of two levels of analysis in emerging organizations, intention and resources are evaluated at both the individual and the organizational level. A sample (N = 47) of young "born-international" firms in the Indian software industry was studied, using a questionnaire. Results of the analysis are mixed for resources at both the individual and firm level variables. Intention is significant at the individual level but not the firm level. Contrary to other studies, these findings suggest that during the early stages of firm development, owner, not firm, characteristics play a pivotal role in performance, especially exports. The speculation is that this occurs because, in early stages, firms are relatively disorganized relative to the owner.

1. Introduction

In this age of NAFTA, EU, and instant globalization via the Internet, the prospect of the "born international" firm seems not only numerically likely, but intrinsically appealing. This idea suggests that the new small- or medium-sized enterprise (SME) would plan from inception to export goods or services as an integral part of its strategy (Oviatt and McDougall, 1994). While possible among firms anywhere in the world, the prospect of the "born-international" SME is particularly appealing in developing countries, where a generation of improved higher education has placed many skilled people into the workforce, but where large revenues still depend on export sales.

In particular, the idea that newly-minted SMEs in developing countries could leverage the Internet to gain regional or global exports would mean that developing nations might be able to leapfrog the initial stages of internationalization traditionally ascribed to businesses. This would speed export-centered development and permit developing countries to compete more quickly, more broadly, and less expensively than ever before (Dichtl et al., 1984; Jaffe and Pasternak, 1994).

Thus the value of a born-international SME is substantial. Oviatt and McDougall (1994) offer a view of how such firms might operate. Although their model for born-international firms is strong on the international aspect, it is perhaps somewhat lacking in terms of the birth and formation aspect. Rectifying this shortcoming is one goal of this paper.

A well-regarded model for explaining the emergence of new organizations comes from Katz and Gartner (1988). The model posits four properties inherent in the emergence process for organizations: *boundary*, which refers to the creation of protected or formalized areas in which emergence can occur; *resources*, which are the building blocks of new organizations, such as human, intellectual, financial, and technological resources; *intention*, which reflects a purposeful effort or ideation to have an organization emerge; and *exchange*, which involves the crossing of the boundary with intent to place outputs and secure

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new inputs. Exporting is in fact one specific form of exchange, during which the good or service traverses not only the boundary of the firm itself, but also the boundary of the nation in which the firm resides. It is in effect a special case of exchange, both in terms of its form and by its place in the organizing sequence, at the end of this particular type of process of firm creation.

In particular, resources and intentions deserve to be singled out for special consideration in the case of the born-international SME. Since exporting involves an action outside of the proximal environment typical for firms (e.g. the locality, the market immediately adjacent to the physical operations) it can only occur if the entrepreneur *intends* to sell internationally. Once the intention is asserted, it requires additional *resources* to come to fruition. These resources are typically used for informing new markets about the products or services of the firm, establishing a presence elsewhere, or similar activities. In comparison, exchange and boundary remain relatively unchanged, even in new settings.

The general model has received considerable empirical use and support (Carter et al., 1994, 1996; Chrisman, 1999), and has been found to explain many of the behaviors and situations observed in emerging firms. To the best of our knowledge, however, it has not been tested in the specific context of the born-international firm, although the list of start-up activities from the Carter et al. (1994) approach has been used in the Global Entrepreneurship Monitor study in 21 nations (Reynolds et al., 2000).

Therefore to study the process of emergence in born-international SMEs, this paper draws on the fundamentals of internationalization strategy from the Oviatt and McDougal model, while drawing on the emergence processes themselves from the Katz and Gartner model. The fundamental research question will be how much do the properties of organizational emergence affect export performance in born-international firms.

This leaves the problem of finding a sampling frame likely to offer substantial opportunity to find born-international firms. Following the sampling frame selection logic espoused by Katz and Gartner (1988), such a frame would need to have substantial numbers of new firms and be designed in such a way as to catch these firms fairly early in their existence. This logic points strongly in the direction of new industries, such as Internet-related firms, or established industries that are new to particular countries, such as computer-related industries in developing countries. It also points towards industries where registration, certification, or membership plays a role in legitimization of the firms, so that the sampling frame is as complete as possible.

The situation of software firms in India does a good job of matching these desired characteristics. The computer software industry in India is in its early stages as a whole. It has seen tremendous growth recently because of the growth of the Internet and its related software needs (as well as one-time factors such as the Y2K problem). It is an industry that as a whole has focused extensively on exporting – an essential concern for studying born-international firms. As a group, software firms are strongly organized, with membership in their trade association nearly universal, and early registration is seen as part of the process of gaining early legitimacy within the industry and with vendors and customers.

Extending the paper's research question to reflect this new information, this paper will look at the impact of the properties of organizational emergence for born-international SMEs in the software industry of India. In the sections below, the two major theoretical concerns – the born-international model and the properties of emerging organizations – will be reviewed, and from this the methodology of the resulting research will follow.

In this paper the focus is on an industry in a developing country; namely the software industry of India, where a substantial subset of new firms has chosen forms that made them born-international firms. India was chosen because it is widely regarded as one of the strongest examples of a resource-poor nation that has leveraged its human capital to achieve export gains. The choice of the software industry stems from its reputation as a leader in the export market and its pivotal position as an industry that uses the Internet, but is not wholly dependent or driven by the Internet. It is neither a pure-play dot-com, nor is it a traditional bricks-and-mortar business, but rather a service industry that can benefit from the Internet. From these choices, the paper intends to provide robust insights to the processes of export propensity

among born-international firms in developing nations

In the following sections, we explore the intellectual traditions in international business studies that underlie the approach of this paper; and then the software industry of India and its fit as an example of an export-ready industry in a developing nation. With this background complete, the paper then develops the conceptual underpinnings of export propensity in SME owners and their firms. These concepts are then tested using a sample comprising Indian software firms. The results and implications discussed.

2. Internationalization studies

Initially, the international business literature focused on the growth of the multinational enterprise (MNE), which arose primarily in America at the end of the second world war (Aharoni, 1966; Dunning, 1958; Hymer, 1960; Vernon, 1966). While the scope of these studies expanded, for example into service sector industries in the early eighties (Erramilli and D'Souza, 1993), the focus remained on multinationals and the industrialized nations in which they are based. In part this was explained by the role of increased telecommunication and transportation facilities, which arguably marginalized the physical and cultural distances in the internationalization of firms.

Another body of research in the late 1980s focused on venture-capital markets and the rise in entrepreneurship that was observed in technology-driven industries (Economist, 1993; Gupta, 1989; Mamis, 1989). These small, high-technology start-up companies were targeting several industrialized countries. The result was a new series of studies on international entrepreneurship in the small and medium enterprise (SME).

The research on international entrepreneurship has mainly looked into:

(a) Comparisons between non-exporters and exporters (Kedia and Chhokar, 1985);
(b) Entrepreneurial activities in different countries (Ohe et al., 1991); and
(c) The impact of public policies on small firm exports (Rossman, 1984).

The researchers performing these studies assumed that there was a universal framework to internationalization, whether the firm was an SME or an MNE. For example, the bulk of the research on the internationalization of small firms examined mature small exporters, since MNE exporters were invariably mature firms. Small firms that were international at or near inception were not considered to be the mainstream research (Welch and Loustarinen, 1988).

Keeping with this universalist approach, research in the export marketing literature made frequent use of "stage" theories (Johanson and Vahlne, 1977) of the multinational enterprise to explain the international expansion of firms. However, this approach attracted significant criticism, and some studies have challenged their basic proposition (Turnbull, 1987). For example, some researchers have argued that existing theories of internationalization are inappropriate for service-intensive industries (Buckley et al., 1992; Engwall and Wallenstal, 1988; Sharma and Johanson, 1987), as they possess different characteristics, namely, intangibility, perishability, customization, and simultaneity of production and consumption. In a key finding, Young (1987) identified situations where the speeding up of the internationalization process is most likely to take place: in high-technology industries characterized by high research and development costs, shorter product life cycles, and a concentration of the market for high-technology products. Young's result suggested that some SMEs might operate according to a different model.

Oviatt and McDougall (1994) contended that in today's new competitive landscape, the internationalization of small, high-technology firms does not follow the gradual, incremental path of internationalization as espoused by Johanson and Vahlne (1977). Building on their pioneering work with Brush (McDougall et al., 1991), they proposed the 2×2 table given in Figure 1, to categorize research. Firms could be either new or established, and their scope of sales could be either domestic or international. Of the four resulting cells, they felt that three (Cell 1 – new domestic, Cell 3 – established domestic, and Cell 4 – established international) had accumulated substantial research by 1994, but the remaining cell (Cell 2 – new international) was relatively unstudied.

Oviatt and Mcdougall (1994) arguably made the

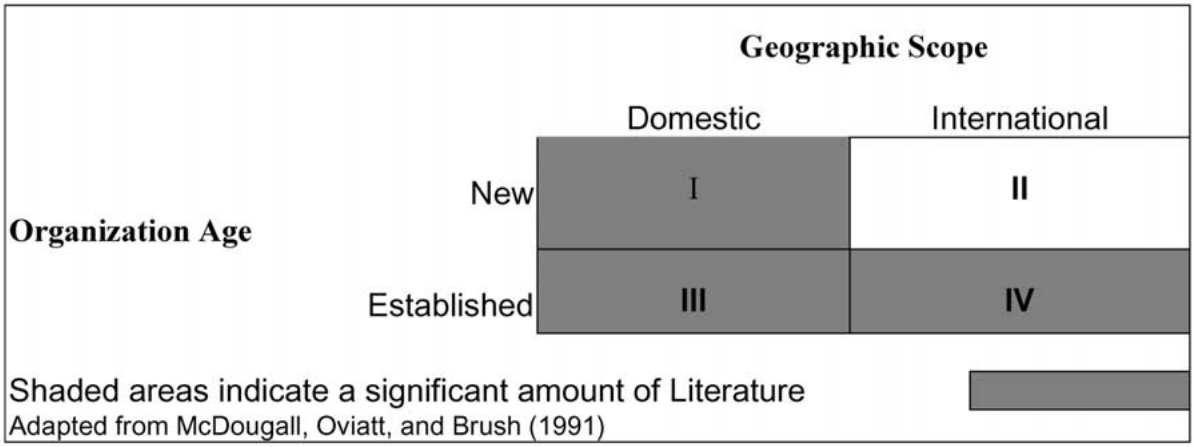

Figure 1. The domain of academic literature on organizations.

strongest case to date that some firms are "born international," and that more research needs to be done about such firm. Building on that idea, this paper will investigate the growth of the "new-international" firm. Our focus is on an industry that has demonstrated exceptional recent growth in SME internationalization: the software industry of India.

3. Organizational emergence theory

With studies on new-international or born-international firms in its nascence, we believe it premature to offer comprehensive models to account for the process. But theoretical works on entrepreneurship, such as the person-and-firm approach of Gartner (1985), offer identification of variables likely to be important to the study of new-international SMEs and useful in explaining the performance of SMEs outside their home country.

In developing a model useful for the new-international or born-international firm (see Figure 2), this paper builds on the model for organizational emergence developed by Katz and Gartner (1988) that specifies four properties of emerging organizations: intention, boundary, resources, and exchange. In keeping with Katz and Gartner, our model considers variables at both the individual level and the organizational level where appropriate.

Boundary is presumed to exist for all firms since to be listed in the sampling frame they needed to have established their boundary conditions (formal registration with the government and the industry association).

The *resource* of particular importance to the model proposed below is information. This information orientation comes from an emerging literature in international entrepreneurship that suggests the major impediment to exporting is information-based (Ali and Swiercz, 1991; Brooks and Rosson, 1982; Carrier, 1999; Dichtl et al., 1990). Several studies of entrepreneurial resources in start-up situations – either should be building directly on the Katz and Gartner model (Chrisman, 1999), or using the model as one of several bases for operationalization (Brush and Chaganti, 1999; Brush et al., 2001; Reuber and Fischer, 1999) – have also shown the centrality of information-based resources in the successful emergence of new firms.

Intention in this instance is the strategic orientation of the entrepreneur considering to create a born-international firm. In terms of firm creation, intention has been extensively studied and shown to relate to firm creation in general (Bird, 1988; Jenkins and Johnson, 1997; Krueger et al., 2000). Tavakoli and McKiernan (1999) have even shown the link of intention and exporting, based on the concept of intention partially drawn from the Katz and Gartner model. Also there have recently been a number of studies that examined the impact of firm and managerial characteristics on firm-level export performance (Axinn, 1988; Cavusgil and Kirpalani, 1993; Cavusgil and Zou, 1994; Naidu and Prasad, 1994). The bulk of the research on

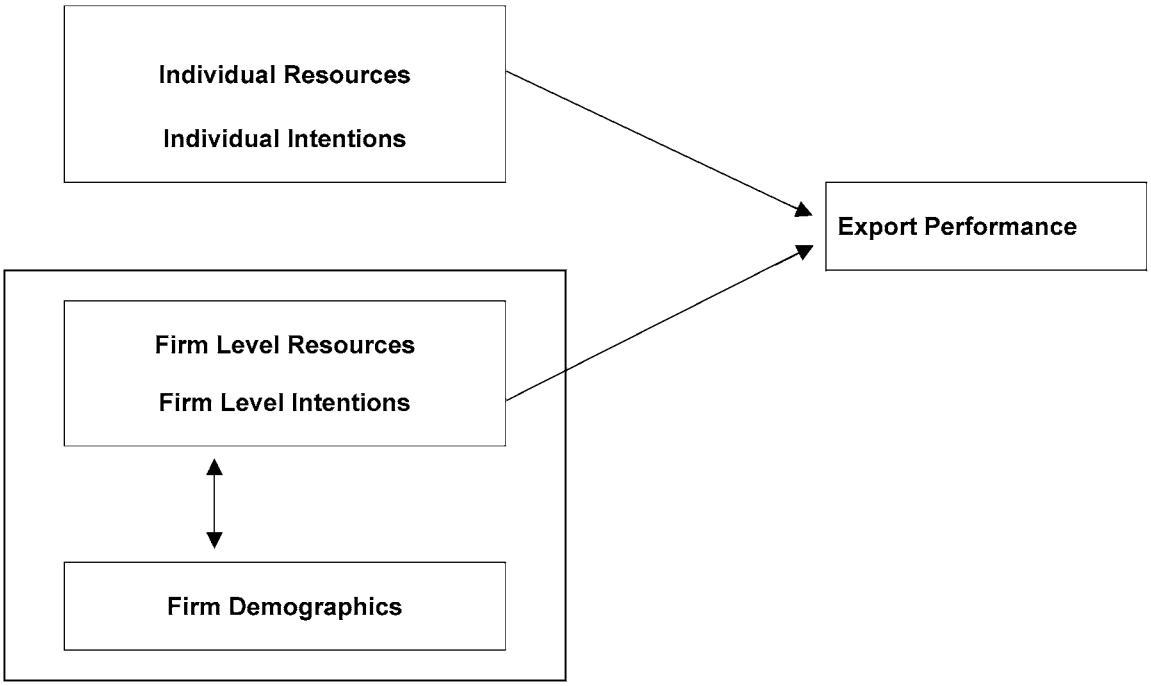

Figure 2. Conceptual framework born international SMEs resources and intentions impact on export performance.

export performance (with the exception of Louter et al., 1991; Naidu and Prasad, 1994; Nakos et al., 1998) has examined large exporting firms.

The fourth property in the Katz and Gartner model is *exchange*, which reflects the concept of resources or intentions crossing the boundary. In the specific example of born- international firms, there is a specific form exchange would take – one in which the boundary crossed is not only that between the firm and its immediate environment, but between the firm and its national environment. In effect, for the case of the born-international firm, exchange is *a priori* the unvarying end process of the sequence. As noted in theory (Katz and Gartner, 1988; Katz and Peters, 1999) and empirical research (Carter et al., 1994, 1996), the sequence of properties can take any form. Katz and Gartner suggested that specific sequences might be tied to particular types of firms. Katz and Peters explored this in greater detail, but this is the first study to actually provide an empirical test of the concept.

Overall these emergence properties are important in examining the firm's exchanges or performance outside its home country (i.e. across the organizational and national boundary), as it is a reflection of the owner/entrepreneur's intention to be international within the first year of operations and his or her informational resources that make such efforts succeed. Previous research has looked into the individual behavioral attributes of decision makers to go abroad or not (Axinn, 1988; Dominguez and Sequeira, 1993; Holzmuller and Kasper, 1990).

As noted earlier, even armed with a specific model and a sequence of properties of emergence, there remains the other problem described by the Katz and Gartner model, namely, the identification of samples and sampling frames that are: (1) derived from the properties of the model and (2) offer the chance to find firms when they are quite young. As noted earlier, the software industry of India possesses many of the qualities desired for a sample. It is a relatively new industry overall and quite new in India itself. With India still classified as a developing country, it is crucial for its high-technology firms to have some international marketing efforts. Also, due to the nature of software development and sales, the likelihood is that registration, certification, or membership

plays a role in legitimization of the firms, so that a trade-association sampling frame might be substantially complete. In the next section, the target sample for this study – the software industry of India – is introduced.

4. The Indian software industry

India's 625-company software industry is arguably one of the subcontinent's greatest success stories, registering a phenomenal average growth rate of 48.11% a year, from $553 million in 1993–94 to $2,800 million in 1997–98 (Statistical Year Book, 1998). With exports accounting for 64.8% of this amount ($1,814 million), the role of exporting in this industry is indisputably significant, making this industry an excellent choice for an internationalization study.

The incidence of firms exporting in the industry has also been steadily growing. Table I depicts a breakdown of software exporters based on their export turnover. For example, in 1997–98, 49.6% of firms exported at least $28,170 annually. In 1996–97 this percentage was 40.5% and in 1995–96, it was only 38.3%.

The $1,814 million in industry exports sales for 1997–98 is broken down by market destination in Table II. North America (mainly the U.S.A.) is the largest market (US$1,035 million), accounting for 57.06% of India's export of computer software and services. Indian software exports to the European market accounted for 26.22% (US$475.5 million).

Table III depicts the prolific international growth of the Indian software industry. It is compiled from the data comparing major destinations for computer software and services for the period 1992–93 to 1997–98. Overall the growth in exports of computer software and services during the period has been phenomenal (see Appendix). The choice of 1992–93 as a starting year for comparison is intentional. Structural reforms of liberalization, deregulation, and privatization began in mid-1991. Therefore, 1992–93 was the first year under the model more oriented towards trade and exports. Thus the findings of increased exporting can also be viewed as an indication of the economic benefit of trade-liberalization policies, although that is not the primary focus of this paper.

It is evident from the data in Tables II and III that the Indian software industry is experiencing a period of substantial growth in terms of the number of firms, their growth in sales, and in

TABLE I
Firms in Indian computer software and services firms by export turnover amount[a]

Export turnover	1997–98	1996–97	1995–96
Over $2,816,901	13	5	4
$1,408,450–$2,816,901	10	8	6
$704,225–$1,408,449	20	19	15
$281,690–$704,224	45	26	17
$28,170–$281,689	222	182	51
Up to $28,169	315	352	253
Total number of firms	625	592	410

[a] Statistical Year Book 1998, Electronics and Computer Software Export Promotion Council, New Delhi, India.

TABLE II
Indian computer software and services industry export sales destinations[a]

Destination	% of export market
North America	57.06
Western Europe	26.22
Non EC Countries	0.13
Africa	1.05
Middle East	1.20
S. E. Asia	12.13
Australia and New Zealand	2.13
Others	0.80
Total	100.00

[a] Statistical Year Book 1998, Electronics and Computer Software Export Promotion Council, New Delhi, India.

TABLE III
Indian computer software and services industry export growth[a]

Year	Exports (US$ million)	% growth	Average % growth
1992–93	259.65		
1993–94	329.03	26.72	
1994–95	475.48	44.51	
1995–96	791.05	66.37	
1996–97	1158.59	46.46	
1997–98	1813.33	56.51	48.11

[a] Statistical Year Book 1998, Electronics and Computer Software Export Promotion Council, New Delhi, India.

particular their growth in exporting, both in terms of number of firms and levels of export sales. These factors make it highly likely that the Indian software industry represents one of the best business locales in the world in which to find new-international or born international firms. Given this promising population, what is needed next is a theoretical model to guide the research.

All the firms surveyed in the Statistical Yearbook provide a multitude of information-technology related services ranging from body shop operations to designing complex systems. The above companies derive more than 50% of their total revenues from foreign clients.

In the sections to follow, the hypotheses regarding resources and intentions will be given both for the individual level and for the firm level. Following these four sections is a fifth section, which considers measures that would indicate how well the sample firms fit the proposed model.

5. Research model development

A. *Research hypotheses*

1. *Resources at the individual level*

In the Katz and Gartner (1988) model, the key resources at firm creation are human and financial. The human resources are largely information-based; in effect a new firm is possible only through the confluence of several kinds of information (Chrisman, 1999). The most widely studied managerial characteristic is the educational level of the decision maker. We argue that an educated entrepreneur with a professional degree will be more "outward looking," and thus willing to explore foreign markets. Several studies have commented on a positive relationship between the education level of the manager and the export performance of the firm (Axinn, 1988; Mayer and Flynn, 1973; Reid, 1983; Simpson and Kujawa, 1974). We expect entrepreneurs in the Indian software industry to have a very strong technical background coupled with graduate management education. We posit:

Hypothesis 1: Entrepreneurs with professional and/or technical education will have firms reporting higher export performance.

Following this information-resource argument, a key factor for entrepreneurs considering exporting would be their knowledge about foreign markets and exporting. The most obvious type of information on foreign lands that an entrepreneur might possess would come from the overseas experience of the entrepreneur himself. Indeed the existing literature suggests that managers with overseas experience are more likely to become involved in exporting (Axinn, 1988; Dichtl et al., 1990; Mayer and Flynn, 1973). Thus we hypothesize that:

Hypothesis 2: Entrepreneurs with international experience will have firms reporting higher export performance.

2. *Intention at the individual level*

Intention is a variable that seeks to capture the inner or psychological world of the entrepreneur. It includes not only the obvious – the intention to create a new firm – but also the nature of the firm to be created. In this study, two aspects of intention are studied: the entrepreneur's overall innovation orientation, and the entrepreneur's international strategic orientation.

The innovativeness of the planned venture is important because an intention to be innovative is a leading indicator of higher performance in SMEs (Kleindl, 2000; Timmons, 1999). In the specific case of high-technology firms, innovation focuses most commonly on leveraging the core competency: technological skill. Thus we hypothesize:

Hypothesis 3: Entrepreneurs with a strong technological innovation orientation will have firms reporting higher export performance.

The second intention variable captures the international strategic orientation of the entrepreneur. We examine the scope and ambition of the chief executive officers and their strategic thrust to internationalize the venture. The bipolar strategic orientation of localization (Quelch and Hoff, 1986; Wills et al., 1991) and globalization (Husgazh, 1986; Jain, 1989; Levitt, 1983) has been extensively studied in the international marketing literature. The successful development of products for international markets lies in *being global and*

acting local (Wills et al., 1991). An important precondition for export success is the international strategic orientation of the firm (Dichtl et al., 1990). We posit that entrepreneurs who, at inception, create a balanced approach to meet the diverse needs of different export markets are successful internationally. Thus the final individual-level hypothesis:

Hypothesis 4: Entrepreneurs with a "glocalization" orientation (thinking global and acting local) will have firms that report higher export performance.

3. *Resources at the firm level*

As noted above, the key resources in export situations are informational resources. Hypotheses 1 and 2 reflect likely major contributors to export orientation in individual entrepreneurs.

One complication with Hypothesis 2 is that experience could occur at the firm level or among the employees in the firm. The foreign training and expertise of employees in a firm has been shown to be a critical determinant of success in its overseas markets. The foreign expertise of employees enables the firm to identify opportunities, build relationships, and minimize costly mistakes in a given foreign location. It is also a reflection of the top management's commitment to recruit, retain, and develop a core group of employees for the international success of the firm. The number of well-trained employees involved in export marketing has been shown to have a strong impact on the export performance of the firm (Kaynak and Kuan, 1993). Other studies examine the quality and quantity issue for successful vis-à-vis unsuccessful exporters in Scotland (Diamantopoulos and Inglis, 1988). In this study, we contend a positive relationship between foreign training and expertise, and export performance. To consider both forms of international experience, the following hypothesis is offered:

Hypothesis 5: Firms with a larger number of foreign-trained employees will have higher export performance.

4. *Intention at the firm level*

The worldwide scope of the firm refers to the number of regions to which the firm has exported since its inception. The foreign market coverage has been shown to positively influence export activities (Cavusgil and Zou, 1994; Diamontopoulos and Inglis, 1988). From these works we believe that given the demands of the world market, a large number of firms would venture outside their home country within the first two years of their formation. Firms that were involved in marketing to several regions in the world were likely to internalize quickly different market conditions, even though firms exporting to only one region could also be successful. Taking these findings on balance we posit hypothesis 6:

Hypothesis 6: Higher levels of foreign market coverage will be positively related to higher export performance.

B. *Contingency variables*

Invariably in studies of firm outcomes (Cavusgil and Zou, 1994; Aaby and Slater, 1989), two demographic variables recur as those most likely to influence results: firm size, and firm age. Because of this paper's focus on the born-international firm, a third demographic contingency variable needs to be included in consideration: the number of years of exporting experience, also known as international experience.

Simply put, the selection of firms for this study relies first on finding firms that are young, defined here as within their first two years of operation. Second, these firms, to qualify as born-international, need to begin exporting during this early stage of their existence. Thus firms that are within their first two years of existence, and that have begun exporting in that period, are operationally defined to be born international. The two measures should be significantly correlated (indicating that the number of years or firm age and the number of years exporting should be similar), but neither should contribute significantly to the regression model.

To review the literature on each of these factors, in prior works some studies observed a positive relationship between the amount of international experience and export performance (Cavusgil and Zou, 1994; Diamantopoulos and Inglis, 1988; Kaynak and Kuan, 1993), while Louter et al. (1991) found that less-experienced firms performed better.

Similarly several studies have examined the impact of the age of the firm on export behavior (Axinn et al., 1995; Kaynak and Kuan, 1993; Ogram, 1982). However, young firms may face more competition in their saturated home markets and have to look for opportunities abroad earlier in their life cycles (Liouville, 1992), and are also likely to commit more managerial resources towards the growth of the international business (Ursic and Czinkota, 1984). In the specific case of the Indian software industry, the bulk of the total revenues are generated from sales outside the home market, even for new-international firms.

As new firms, it is likely that they are small in size, e.g. total number of employees is less than 50, as Naidu and Prasad (1994) reported. Many studies have found a positive relationship between size and exporting (Axinn et al., 1995; Bonaccorsi, 1992; Calof, 1994; Cavusgil and Zou, 1994; Chetty and Hamilton, 1993; Kaynak and Kuan, 1993). Other scholarly works have reported a negative relationship between firm size and international performance (Cooper and Kleinschmidt, 1985; Louter et al., 1991; Naidu and Prasad, 1994). Because of the lack of consistency in prior findings, it is important to include the size variable as a potential key covariate in assessing the factors contributing to export performance in born international firms.

6. Methodology

A. *Research location*

As noted above, India was selected as the focus of this study because of: (1) the absence of major studies on the internationalization of service industries; (2) the growing importance of the software industry in India's overall balance of payments; and (3) the structural reforms that began in mid 1991 with the advent of liberalization, deregulation, and privatization.

Chief Executive Officers of small Indian software firms formed the population of this study. Firms included in the sample were drawn from the *Directory of Indian Exporters of Computer Software and Information Technology Enabled Services, 1998–1999*, published by Ministry of Commerce, Government of India.

B. *Questionnaire administration*

The questionnaire was composed in English, and a pilot study was conducted in the Indian cities of Bangalore, Hyderabad, Chennai, Bombay, Pune, New Delhi, and Calcutta. When adjusted for results from the pilot study, the 27-question final version of the questionnaire was mailed to the Chief Executive Officers of software firms with an export turnover of less than Indian Rupees 10 crores (approximately US$300K) as indicated in the directory. A cover letter explaining the purpose of the study and a self-addressed envelope for returning the questionnaire to the author were provided to the intended respondents.

Four hundred fifty firms in the seven major cities were identified as exporting software to destinations around the world. Of the 450, sixty firms responded, and of the sixty firms, forty-seven provided usable responses to the key questions asked to test the hypotheses. This is a 10.4% response rate, which while low in general is consistent with SME mail surveys asking performance data. There may be several reasons for this low response rate. Foremost among these is the extreme time pressure CEOs in this industry face, limiting their time to respond. In addition, although the survey was co-sponsored by an Indian trade association to which the vast majority of sample members belonged, the typical data-gathering efforts of the association are usually telephone interviews rather than mail surveys, and the change of technique may have lowered responses.

C. *Dependent variables*

One of the major problems encountered by the researcher was collecting performance data from small companies, as they are privately owned and extremely reluctant to disclose sensitive financial information to outsiders. As observed in the literature, a large number of empirical studies in the past have not used financial performance measures (Koh, 1991; Axinn, 1988). We decided in this study to use several measures of export performance: (a) exports as a percentage of total sales; (b) export sales in the local currency; (c) exports growth in percentage as compared to the previous year; and (d) export profitability in per-

centage in relation to earlier year. Due to missing data for exports sales and profitability, we were restricted to using measures (a) and (c).

The measure of total exports as a percentage of total sales (Export Intensity) has been widely used in the literature (Axinn, 1988; Bello and Williamson, 1985; Bilkey, 1985; Burton and Schlegelmilch, 1987). To increase the validity of the performance measure, we also used percentage of export growth as compared to the previous year. We wish to point out the limitation of the above two dependent variables is a fair degree of collinearity at 0.486.

D. *Explanatory variables*

1. *Entrepreneurial characteristics*

The four entrepreneurial characteristics were measured in the following manner. *Technical education* was measured by asking the CEOs to indicate their undergraduate and graduate (if applicable) field of specialization. *International experience* was measured by asking them three related questions: (a) whether they possessed international experience, (b) if they have international experience, in what region was expertise based, and (c) the number of years of international experience in each region. *Technological innovativeness* of the entrepreneur was examined through the use of an innovation scale adapted from Rogers and Schumaker (1971). Finally, *international strategic orientation* of the chief executive officer was measured through a question pertaining to globalization versus localization thrust. We were interested in measuring the scope and ambition of the entrepreneur.

2. *Firm-level characteristics*

Five firm-level characteristics were examined in this study. They were measured in the following manner. The *size* of the firm was operationalized with the help of (a) total sales and (b) number of employees. Because of the high degree of collinearity (0.668), the researchers decided to use number of employees. *Firm age* was measured by asking CEOs to indicate the year the company or business was formed. This is consistent with the study of Axinn et al. (1995). *International experience* was measured by asking the entrepreneurs the year in which the firm started exporting on a continuous basis (Cavusgil and Zou, 1994). Worldwide scope of the firm was designed to examine the local/regional/global sales coverage of the firm's products. Finally, the *foreign expertise* of employees was measured through a dummy variable: yes or no. This was similar to a measure developed by Diamantopuolos and Inglis (1988) examining the number of employees involved in export operations.

7. Results and discussion

Multiple regression was used to explain the export performance of Indian software firms using entrepreneurial attributes and firm specific characteristics. The reduced model was specified to examine the impact of the above two characteristics one at a time. Thereafter, the enhanced model was stated to measure the overall impact. The variable constructs and the resulting distribution fit the requirements for ordinary least squares (OLS) regression; thus the use of the above mentioned technique (Kennedy, 1985).

Preparatory to the regression, a correlation matrix for the independent variables was computed, and is reproduced in Table IV. A statistically significant degree of correlation ($p < 0.01$) was observed for four relationships: (a) between strategic orientation of the entrepreneur and foreign expertise of employees ($r = 0.654$); (b) between strategic orientation and educational background of the entrepreneur ($r = –0.496$) (c) between international experience of firm and firm age ($r = 0.672$); and (d) between international experience of firm and firm size ($r = 0.495$).

Because of the high degree of correlation, the model was specified measuring the entrepreneurial characteristics of strategic orientation and international experience separately. Likewise, the model measuring the impact of firm-level characteristics on export performance was specified using age and international experience of the firm one at a time.

A. *Entrepreneurial characteristics*

Table V shows the results of tests of a reduced version of the full model, examining the impact of entrepreneurial characteristics on export performances of Indian software firms. Selected

TABLE IV
Correlation for all independent variables (N = 47)

Variables		Mean	SD	1	2	3	4	5	6	7	8
Educational background of entrepreneur	X1	3.72	0.54								
International experience of entrepreneur	X2	0.81	0.4	–0.050 (0.741)							
Technological innovativeness of entrepreneur	X3	2.11	1.07	–0.061 (0.684)	–0.053 (0.722)						
Strategic orientation of entrepreneur	X4	2.81	1.1	–0.496*** (0.000)	0.363** (0.012)	–0.038* (0.800)					
Size of firm	X5	3.55	1.38	–0.053 (0.725)	–0.080 (0.593)	–0.041 (0.785)	0.359** (0.013)				
Age of firm	X6	11.43	9.42	–0.177 (0.233)	–0.216 (0.146)	–0.151 (0.309)	–0.131 (0.381)	0.21 (0.156)			
International experience of firm	X7	6.87	4.56	–0.279* (0.057)	–0.134 (0.371)	–0.011 (0.944)	0.191 (0.199)	0.495*** (0.000)	0.672*** (0.000)		
Foreign expertise of employees	X8	0.6	0.5	–0.102 (0.495)	0.370** (0.010)	0.165 (0.268)	0.654*** (0.000)	0.366** (0.012)	–0.148 (0.319)	0.198 (0.183)	
Foreign market coverage	X9	2.85	0.36	–0.217 (0.144)	0.100* (0.503)	–0.014 (0.923)	0.367** (0.011)	0.082 (0.584)	0.090 (0.549)	0.015 (0.922)	0.143 (0.339)

*** Significant better than 0.01.
** Significant better than 0.05.
* Significant better than 0.10.
( ) p-value.

interaction terms have been included to study the joint impact of top-management attributes on the performance measures. This methodology has typically been used to partition the main effects from the interaction terms. All of the models specified in Table V had significant F statistics, with an Adjusted R^2 ranging from 0.089–0.563.

In terms of resources of the entrepreneurs themselves, the first hypothesis stated that entrepreneurs with technical and/or professional education would have strong export performance. This is strongly supported by the results in Table V for both export performance measures (export growth and export intensity). Of the eight possible relationships across the four models, six outcomes were significant, and with the exception of one, all were in the predicted direction.

The second hypothesis stated that entrepreneurs who have had international experience would have stronger export performance. This is supported in two of the four models. The regression coefficient was significant in the case of export intensity but not in the case of export growth, indicating weak support for the hypothesis.

Considering the entrepreneurial intention of the entrepreneurs, hypothesis 3 stated that innovative entrepreneurs would have superior export performance. This variable is not significant for all the models, but supports the hypothesis in five of the eight models. In some cases where the regression coefficient was insignificant, the coefficients were negative. Overall, this hypothesis received moderate support.

The other entrepreneurial intention hypothesis (Hypothesis 4) examines the impact of strategic orientation of the entrepreneur and measures its impact on performance measures. The results indicate a weak support for our argument, that "glocalization" is the way to achieve success abroad, with two of the four outcomes significant. Both significant results were for the outcome measure of export growth.

As noted above, the impact of interaction terms on the export performance measures was also tested. The joint effect for (educational background*technological innovativeness) is not supported for export growth, but is supported for export intensity, although this relationship is negative. This result came as a surprise, given the common-sense expectation that entrepreneurs with technical education would be prone to innovation in this particular industry. Possible explanations include the innovation-inhibiting effects of formal education, a greater fixation with perfecting one particular product, or the less-educated entrepreneur having greater skills at envisioning types of software from an end-user perspective with minimal technological background. However, there is insufficient information available to determine if these or other explanations apply in this case.

B. *Firm-level characteristics*

The regression results for the firm-level characteristics are provided in Table VI. The overall F statistics are significant for six of the eight models, although in general the results at the firm level are not as strong as those of entrepreneurial level. The models appear to predict export growth better than export intensity. The adjusted R^2 for the eight models specifications range from 0.067 to 0.214.

Hypothesis 5 considered the effect of employee foreign expertise on export performance. Of the eight models, only three were significant, indicating marginal support for the model. The two stronger coefficients ($p < 0.01$) were for the outcome variable of export growth, with a weak coefficient ($p < 0.10$) for export intensity. This result is slightly weaker than the comparable variable at the entrepreneur level.

Hypothesis 6 predicted that the greater the firm's level of foreign market coverage, the greater the performance. This relationship did not hold in any of the models, with none of the eight instances being significant. Although not significant, interestingly six of the eight coefficients were negative, which may suggest that in studies with larger samples, it may be found that a firm could spread itself too thinly across many different markets, negatively affecting performance.

Except for one, all the models examining the impact of firm size on export performance are not significant, indicating that firm size has no impact on export performance. It is interesting to observe that the coefficients, although non-signficant, were negative between firm size and export performance for the Indian software industry, contrary to the evidence presented in other international business research. This may be a function of the

TABLE V
Regression results for entrepreneurial characteristics

Dependent variables	Independent variables							
	Intercept term	Educational background	International experience of manager	Technological innovativeness	Strategic orientation	Interaction item	Overall F	Adjusted R^2
		X1	X2	X3	X4	X1 * X3		
Export growth	–97.027**	29.252***		7.6*	11.173**		4.546***	0.188
Export intensity	–52.109*	26.867***		7.903***	3.858		9.699***	0.362
Export growth	5.792	2.357		–44.779	11.506**	13.667	4.029***	0.208
Export intensity	–215.121***	69.507***		90.946***	3.329	–21.667***	14.367***	0.538
Export growth	69.336	–0.138	0.142	–1.461		1.736	2.349	0.105
Export intensity	–200.063***	1.508***	0.204**	4.045***		–4.149***	15.803***	0.563
Export growth	–31.9	18.309**	10.139	7.029			2.493*	0.089
Export intensity	–40.321 *	23.507***	14.217**	7.932***			11.132***	0.398

*** Significant better than 0.01.
** Significant better than 0.05.
* Significant better than 0.10.

TABLE VI
Regression results for firm characteristics

Dependent variables	Independent variables									
	Intercept term	Size of firm	Age of firm	International experience of firm	Foreign market coverage	Foreign expertise of employees	Interaction item	Interaction item	Overall F	Adjusted R^2
		X5	X6	X7	X8	X9	X5 * X8	X7 * X9		
Export growth	65.988*	–4.034	–0.295		–2.744	31.584***			3.113**	0.155
Export intensity	92.088***	–3.247	–6.41E-01		–1.079	8.828			1.824	0.067
Export growth	70.243**	–1.406		–2.003*	–4.274	33.541***			4.137***	0.214
Export Intensity	96.474***	–1.383		–1.972**	–3.54	12.580*			2.630**	0.124
Export growth	68.791*	–5.559	–0.312		–2.059	23.468	2.408		2.459**	0.137
Export intensity	100.056***	–7.580*	–0.689*		0.868	–14.24	6.846		1.791	0.079
Export growth	168.158**	–3.381		–15.986	–36.358	30.002	2.19	4.772	3.063**	0.212
Export Intensity	75.021	–5.963	2.394	8.982	–14.282	7.704	–1.538	2.122*	0.128	

*** Significant better than 0.01.
** Significant better than 0.05.
* Significant better than 0.10.
$n = 47$.

born-global firm, which would typically increase its domestic sales as it grows.

Similarly, the impact of firm age on export performance is insignificant except for one model. Since there was found to be multicollinearity between age and international experience, this variable was omitted from two model specifications. As with firm size, there was a nonsignficant negative relationship between age and performance measures in all instances.

Typically when analyzing hypotheses involving complex relationships, interaction terms are added to the linear regression (Aiken and West, 1991). Given the hypotheses presented in this paper and the contingency factors involved, it was thought that two sets of interaction terms would be needed – one for size of firm interacting with foreign market coverage, and another for international experience interacting with foreign expertise of employees. None of the interaction effects were significant at the firm level.

C. *Entrepreneurial and firm level characteristics – Main Effects*

The final two regression tables examine the main and interaction term for the enhanced model. Table VII examines the full model consisting of the impact of both entrepreneurial- and firm- level characteristics on performance measures, viz., export growth and export intensity. In the model specifications, we have partitioned the main effects from the interaction terms. Also, the multicollinearity problem has been addressed for both entrepreneurial and firm-specific variables. An examination of the combined entrepreneurial and firm-level main effects on export growth and intensity reveals that the overall F ratios for all eight of the models are significant at < 0.05. The adjusted R^2 for the eight models specified range from 0.233–0.409.

Within the entrepreneurial characteristics, educational background is significant and consistent with Hypothesis 1. The regression coefficient for Hypothesis 2 is not significant and has a negative sign in two of the models specified. Thus there is no support for the international experience of the entrepreneur hypothesis. Technological innovativeness for the entrepreneur (Hypothesis 3) has significant coefficients for the dependent variable – export intensity – and supports the hypothesis. The strategic orientation hypothesis for the entrepreneur (Hypothesis 4) has not been significant, though the signs of the coefficients are consistent with the hypothesis. Overall there is one individual-level resource variable and one intention variable found to affect export performance as predicted.

The regression coefficient for the firm-level resource factor, the international experience of the employees (Hypothesis 5), was significant, although the firm-level intention variable, namely foreign market coverage (Hypothesis 6) was not. There was support for the lack of effect of the three firm-level demographic contingency factors insofar as of sixteen possible outcomes, only four instances were significant.

It is interesting that the traditional determinants of internationalization such as size, age, and international experience all have negative coefficients. We suspect a U-shaped relationship might exist, but is not possible to test using linear regression techniques. The only firm-specific variable that turns out to be significant and has a positive impact on export growth is foreign expertise of employees.

D. *Entrepreneurial and firm level characteristics – interaction effects*

Table VIII examines the complete model showing both main and interaction effects prediction of the two export performance measures. The overall F statistics are significant for all eight of the models. The adjusted R^2 range from 0.211–0.628 with the higher R^2 for models predicting export intensity.

Looking at the total model, some consistencies appear. In predicting export intensity, individual-level variables such as entrepreneur's educational background (Hypothesis 1), technological innovativeness (Hypothesis 3) and the interaction term based on these two variables are all significant. The pattern here, which is among the strongest in the study, suggests that greater education and a stronger orientation toward technological innovation lead to higher levels of export intensity, but this is tempered by the significant negative relation of the interaction effect. For at least a subgroup of entrepreneurs, higher levels of education or innovation predict lower export intensity.

TABLE VII
Regression results for entrepreneurial and firm characteristics (main effects)

Dependent variables	Independent variables											
	Intercept term	Educational background	International experience of manager	Technological innovative-ness	Strategic orienta-tion	Size of firm	Age of firm	Interaction experience of firm	Foreign market coverage	Foreign experience of employees	Overall F	Adjusted R^2
		X1	X2	X3	X4	X5	X6	X7	X8	X9		
Export growth	–31.326	20.244**	–8.783	3.641		–4.709	–7.57E-02		3.84	35.767***	3.092**	0.241
Export intensity	–39.082	23.332***	8.565	6.861**		–2.686	–0.268		5.303	6.275	5.195***	0.39
Export growth	–49.362	22.729**		4.604	2.517	–4.468	3.69E-02		1.746	29.742**	2.999**	0.233
Export intensity	–38.365	24.784***		6.690**	1.897	–3.502	–0.271		4.679	7.166	4.909***	0.373
Export growth	–12.458	17.157**	–10.673	3.551		–2.699		–1.438	2.264	36.965***	3.477***	0.274
Export intensity	–30.061	21.859***	7.993	7.040***		–1.643		–1.007	3.806	7.881	5.543***	0.409
Export growth	–26.373	18.281*		4.252	0.793	–2.209		–1.273	1.419	31.813**	3.288***	0.258
Export intensity	–29.519	23.272***		6.909**	7.95	–2.358		–1.049	3.073	8.518	5.290***	0.395

*** Significant better than 0.01.
** Significant better than 0.05.
* Significant better than 0.10.
$n = 47$.

TABLE VIII
Regression results for entrepreneurial and firm characteristics (interaction effects)

Dependent variables	Independent variables							
	Intercept term	Educational background	International experience of manager	Technological innovativeness	Strategic orientation	Size of firm	Age of firm	International experience of firm
		X1	X2	X3	X4	X5	X6	X7
Export growth	8.754	8.432	–7.022	–20.544		–3.282	–9.03E-02	
Export intensity	–219.289	72.569***	3.772	98.750***		–2.915	–0.116	
Export growth	–7.692	10.093		–25.31	4.208	–2.352	5.97E-02	
Export intensity	–215.012***	72.590***		100.680***	–0.91	–3.391	–0.162	
Export growth	178.362	3.479	–1.776	–26.878		–1.906		–24.497**
Export intensity	–179.048***	69.950***	3.253	99.038***		–2.493		–4.828
Export growth	238.899**	–8.296		–76.941**	–24.572**	0.375		–17.694*
Export intensity	–166.710**	67.896***		96.508***	–5.214	–2.632		–3.718

Dependent variables	Independent variables							
	Foreign market coverage	Foreign experience of employees	Interaction item	Interaction item	Interaction item	Interaction item	Overall F	Adjusted R^2
	X8	X9	X1 * X3	X3 * X4	X5 * X8	X7 * X9		
Export growth	4.216	39.705	6.285		–1.686		2.369**	0.211
Export intensity	2.325	19.471	–24.170***		–1.851		8.641***	0.599
Export growth	1.114	37.546	7.774		–3.256		2.367**	0.211
Export intensity	3.136	20.146	–24.754***		–1.324		8.540***	0.596
Export growth	–50.915**	43.169	8.703		–1.727	7.988**	3.001***	0.303
Export intensity	–7.383	16.102	–24.067***		–0.384	1.279	8.781***	0.628
Export growth	–40.944	54.001**	15.011*	11.002***	–4.031	5.856*	4.172***	0.431
Export intensity	–3.795	18.608	–24.333***	1.31E+00***	0.245	0.869	7.920***	0.623

*** Significant better than 0.01.
** Significant better than 0.05.
* Significant better than 0.10.
$n = 47$.

This could take several forms, such as the "Steve Jobs type" of entrepreneur who lacks formal training but has a strong sense of what innovations sell, or the "Edwin Land type" of entrepreneur who uses a strong technical background to focus on perfecting the technology instead of developing the export market.

For export growth, the pattern is far more equivocal. Two of the four export growth models have no significant coefficients, while a third model has three significant coefficients and a fourth model has seven. In the model with three significant coefficients, there are two negative coefficients, the international experience of the firm and the foreign market coverage, along with the positive interaction effect formed by the firm international experience and employee foreign experience. The negative coefficient for firm-level foreign market coverage is counter to Hypothesis 6.

In the most involved regression model predicting export growth, individual-level variables of technological innovativeness (Hypothesis 3) and Hypothesis 4's strategic orientation (both negative relationships), and the interaction terms for education and innovativeness as well as innovativeness and strategic orientation, combine with firm-level variables such as firm international experience, foreign experience of employees (Hypothesis 5) and the interaction of these two variables. The results for Hypotheses 3 and 4, while significant, are opposite the predicted direction, while Hypothesis 5 is supported. This model suggests that while a firm can benefit from the foreign experience of its employees, the "glocalization" or the technological innovativeness of the entrepreneur can lead to less export growth. This model describes a firm where the export performance rests in the employees' hands, using their experience to build exports while keeping the entrepreneur from wasting energy pursuing global strategy or technology initiatives that lead the firm away from what is important in exporting.

Taken together, these findings from the combined model suggest that export intensity can be better predicted than export growth, and the individual-level hypotheses constitute a more powerful set of predictors than the firm level variables. The full model shows the necessity of including interaction effects to have an adequate understanding of the underlying predictive relationships in the model.

8. Conclusions

In this study we sought to examine the impact of resources and intention – measured at the individual and firm level on export performance – on export growth or export intensity of born-international firms. The general belief was that "more is better": more resources – in this case education or prior experiences – would lead to higher performance, and similarly more intention – shown as technological innovativeness or strategic orientation or foreign market coverage – would lead to higher export performance.

The results showed a higher level of complexity than the basic hypotheses suggested. While significant at the individual level, intentional measures such as strategic orientation of the owner were "washed-out" by group impacts in the combined model. Even the impact of technological innovativeness decreased for measures of export intensity, and had no significant relation to export growth. The only resource at either level of analysis shown to remain strongly related to export performance was that of owners' education.

The model suggested by these results is one best applied to the outcome measure of export intensity. The pattern of significant results for the individual-level resource and intention variables suggest that firm creators provide a foundation level or basis for growth of the firm, through their high levels of education (necessary for technology-based software firms such as those in our sample), and through their willingness to be (and create firms that try to be) technologically innovative. These are the fundamental contributions of resources and intention that create the conditions for future success in the born-international firm.

As firms grow by adding employees these owner-driven effects become diluted, as other researchers have shown in case studies (Schein, 1983) and in large-scale statistical studies (Savage, 1979). What starts out as the guiding passion of the founder gets diluted when surrounded by employees who see the firm not as a mission, but as a job. As the firm adds employees, the intensity of the founder's vision can continue to be diluted across the firm as a whole.

In the Katz and Gartner model, we would expect that as the firm grows, the individual level intention of the entrepreneur would be less evident at the firm level, even to the point where firm-level intentions might show little or no similarity to those of the entrepreneur. This process is seen in the full model, comparing the dilution of technological innovativeness and strategic orientation when comparing results from the individual-level model to those combining entrepreneur, firm and interaction effects.

To be fair, the addition of employees is not without its compensations. Most significantly, and unexpectedly, the foreign experience of employees becomes more important, especially in terms of being able to grow exports, often through multiple market entries. Arguably, what additional employees lack in the driving passion or intentions of the founders, they make up through their knowledge of markets for firm growth. The fact that this contribution is related to market growth and not market intensity goes back to the differential levels of intention or intentional intensity we find in owners and employees.

Another factor to consider is the considerable contribution to prediction that the interaction effects add to the model, which is on the order of an added contribution of 0.2 to the R^2 of the main effects and interaction effects models for export intensity. This reflects in part the effort to measure variables such as resources or intention with multiple components. It was expected that the components would share variance, and they do. That these interaction effects would so often be significant was unexpected, but they suggest that resources and intention are relatively broad-scale measures, requiring the use of multi-item scales or indexes to measure them fully.

What is missing from the current study is a means by which to demonstrate how founder-employee alignment might effect results. If part of the problem in a growing firm is the dilution of owner-intention effects, we would expect this dilution to be less in firms where the employees' intentions and those of the founder are more consistently aligned. In effect, if employees are hired because of a shared belief about innovation or strategy, or if they gain this orientation through training, socialization or role modeling, the resulting intention level of employees might better reflect those of the founding entrepreneurs, and the dilution effect seen here would be less.

The fundamental limitation of the study is its small sample size. While not atypical for surveys asking entrepreneurs performance questions, the low response rate and relatively small sample makes definitive interpretation of the results problematic. Additionally, with only two measures of export performance used in the study, it is possible that other major outcomes, such as value of exports and export profitability could have different results. However, until researchers agree on a comprehensive and dynamic measure of export performance, such piecemeal efforts will remain the norm.

The other major limitation is that of generalization. This particular study was conducted in India – one developing country. As noted above, the software industry in India has seen unusual, perhaps even spectacular, growth. It is often used as an exemplar to other developing countries of how intellectual capital can be leveraged. As such, the findings drawn from this particular combination of industry and country might not be widely generalizable, although they may nonetheless be instructive.

As designed, this study was intended to have implications in three areas: extending the Katz and Gartner (1988) model of organizational emergence to consider the specifics of born-international firms; contributing to the growing literature on born-international firms with a theory-based approach; and hopefully yielding findings suitable to inform or at least suggest future policy directions in SME exporting.

In terms of the Katz and Gartner model, these results provide a partial empirical application. Both intention and resources appear to have some relation to exchange outcomes, and these are apparent at both individual and firm levels of analysis. The interaction between individual resource and intention measures as well as the interaction between the levels of analysis offer new insights for the practicalities of the inner working of the model, and should result in a basis for better articulation of cross-level phenomena in future revisions.

Overall, the results suggest that the born-international firm does depend on the contribu-

tions of the firm founder and the firm itself to achieve exporting success. The resource-intention approach offers a way to describe how firms achieve higher levels of export intensity, but the significant residuals also indicate that the current model, while significant, still leaves much of the exporting exchange process undescribed.

And finally, this study does provide some suggested direction for managers and policy makers. As we have observed in the previous pages, entrepreneurs make a huge difference in the export performance of young, start-up global software firms. The export promotion and financial institutions should work together with entrepreneurs of born-global firms to identify the export potential of their products and services in new markets. In such efforts, the potential role of co-ethnic expatriate entrepreneurs should not be underestimated. Given the fact that the software industry in India has grown tremendously during the past decade, the government could leverage the networks developed with non-resident Indians in the developed countries – United States, United Kingdom, and Japan – to extend exporting capabilities through expanding the contacts and experience of non-exporting entrepreneurs. The information technology revolution has already begun, and the competitiveness and the wealth creation of the developing countries such as India will be in the hands of new companies aspiring to be global players in the near future.

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Appendix

Comparison of major destinations for computer software and services, 1993–94 through 1997–98
Value: (U.S. million)

Destination	1993–94		1994–95		1995–96		1996–97		1997–98	
	Value	% age of sectoral total	Value	% age of sectoral total	Value	% age of sectoral total	Value	% age of sectoral total	Value	% age of sectoral total
U.S.A. & Canada	220.02	66.87	254.12	53.44	489.01	61.82	651.59	56.24	1034.69	57.06
Latin America	0.95	0.29	1.76	0.37	1.81	0.23	1.76	0.15	1.45	0.08
Europe (EC Countries)	58.01	17.63	106.31	22.36	146.48	18.52	238.64	20.6	475.46	26.22
Europe (Non-EC Countries)	17.31	5.26	25.68	5.40	34.5	3.10	39.25	3.39	1.99	0.11
Russia & C.I.S. Countries	0.63	0.19	17.19	3.62	8.46	1.07	0.99	0.09	0.36	0.02
African Countries	3.42	1.04	4.67	0.98	71.8	0.91	17.79	1.54	19.04	1.05
Middle East Countries	5.66	1.72	6.88	1.45	6.53	0.83	14.58	1.26	21.76	1.20
Singapore, Hong Kong & Other South Asian Countries	12.17	3.7	39.16	8.24	84.72	10.71	120.54	10.4	83.05	4.58
Japan, Korea & Other Far East Countries	8.45	2.57	13.14	2.76	12.14	1.53	51.11	4.41	136.91	7.55
Australia & Other Oceanic Countries	2.4	0.73	6.56	1.38	10.26	1.30	22.35	1.93	38.62	2.13
Total		100.00		100.00		100.00		100.00		100.00

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