THE DETERMINANTS AND PERFORMANCE OF INTERNATIONAL NEW VENTURES: THREE STUDIES

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ABSTRACT[1]

New venture internationalization differs from that of large established firms and is an important research inquiry for international entrepreneurship. In the past 30 years, studies on new venture internationalization have proliferated but with fragmented nature. The first study reviews extant studies regarding conceptual and methodological developments of international new ventures (INVs) through content analysis of 74 influential works. Particularly, this study focuses on the determinants and performance of INVs at the entrepreneur, firm, and environment levels. We then identify significant gaps within this stream of research and suggest future research directions.

The second study explores the effect of founding team ethnic composition on a new venture's internationalization strategic choice and then examines the consequent performance implications of INV strategy. A new venture with an ethnically diversified founding team could leverage international experience and network of each of its founders, thereby influencing its recognition of opportunities and access to resources to pursue internationalization strategy. Analyzing longitudinal data of 4,928 new ventures in Kauffman Firm Survey, our empirical results suggest that more immigrant entrepreneurs in a new venture's founding team are more likely to pursue INV strategy while more US citizen entrepreneurs in a founding team will pursue domestic new venture (DNV) strategy. Furthermore, an INV has higher revenues than a DNV but there is no difference in profits between them. The findings suggest that early internationalization is critical to immigrant-started new ventures through revenue growth.

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The third study explores the survival of ethnic new ventures, particularly testing the roles of INV and ethnic entrepreneurs' immigration status. New ventures are more likely to fail in early years of formation as they face liability of newness and smallness. We found that ethnic new ventures overall have a lower likelihood of survival compared with non-ethnic new ventures. But, ethnic new ventures could increase survival through INV strategy and immigration status. After ethnic entrepreneur's naturalization, ethnic new ventures could achieve legitimacy, seeking further social capital in host country. Meanwhile, INV strategy could compensate for ethnic new venture's liability of ethnicity in host country.

By incorporating diaspora and ethnic entrepreneurship literature, my dissertation focuses on the role of immigrants on early internationalization strategy and the effect of such strategy on performance and survival of their started new ventures, further advancing the understanding of international entrepreneurship.

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CHAPTER 1
INTRODUCTION

The study of international new ventures has become an important research domain in international entrepreneurship literature (McDougall, et al., 2003). Traditionally, many small and medium firms followed a stage model in terms of internationalization, i.e., the firm operates in domestic market earlier and pursues growth through internationalization in the later stage (Johanson & Vahlne, 1977). However, many newly established ventures view the world as their markets after inception. Though scholars use the different concepts such as international new ventures (Oviatt & McDougall, 1994), born-global firms (Knight & Cavusgil, 1996) and early internationalization, they describe the same phenomenon: firms begin to internationalize at founding or very shortly thereafter. The emergence of these firms challenges traditional stage model of internationalization. At same time, these firms significantly contribute to world economy for innovation and economic growth (Mudambi & Zahra, 2007; Oviatt & McDougall, 1994; Zahra, 2005).

In the past 30 years, there has been large volume of studies on this topic; further knowledge is still required to advance the understanding of early internationalization process because previous literature ignores the role of diaspora and immigrant entrepreneurs in choosing early internationalization strategy. By combining international, diaspora, and ethnic entrepreneurship, my dissertation aims to further examine the determinants and effect of INV strategy by focusing on the roles of immigrants and ethnic new ventures. Diaspora and immigrant entrepreneurs facilitate the cross border

flow of human, social, and financial capital, playing a crucial role in early internationalization of their new ventures.

In the first study of my dissertation, I review existing literature and suggest future research directions regarding INVs. Particularly, this study firstly compares stage model of internationalization and INV model. Then, the determinants and performance of INVs are identified at the entrepreneur, firm and environment levels, and grouped into several general factors. After that, we review methodological issues, such as the measures and statistical models. Finally, we suggest directions for future studies.

Previous literature focused on the entrepreneur, firm and environment determinants of INVs. The second study examines the determinants of INVs at founding team level, particularly the ethnic composition of founding team, which is under researched topic in international entrepreneurship. It is believed that a new venture with an ethnically diversified founding team can leverage resources from each founder, which influences the new venture's early internationalization strategy. Moreover, immigrant founders' previous experience in home country could reduce liability of foreignness associated with the new venture's internationalization. Internationalization presents growth opportunities for new ventures. By employing two-stage statistical techniques, we also explore the effect of INV strategy on new venture performance.

The third study examines the effect of INV strategy on survival of a specific form of organization: ethnic new venture. Existing international entrepreneurship literature fails to address such issue though many INVs are founded by immigrants or their children. Ethnic entrepreneurship focuses on individual and country level analysis but neglects the

firm strategy and survival of ethnic enterprises. Facing liability of ethnicity in host country, ethnic entrepreneurs are difficult to obtain human, social and financial capital critical for their new ventures' growth and survival. Early internationalization strategy is a good choice for ethnic new ventures. This study tests the role of INV strategy and ethnic entrepreneur's immigration status on ethnic new venture survival.

CHAPTER 2
INTERNATIONAL NEW VENTURES: LITERATURE REVIEW AND SIGNIFICANT GAPS

Introduction

International diversification is an important strategic option for both new ventures and SMEs by providing growth opportunities. Recently, internationalization research has increasingly focused on the eminent role of new ventures in international markets. A growing stream of literature suggested that some new ventures leverage resources from multiple countries in their early history and achieve market success than what has been observed in past (Oviatt & McDougall, 1994; Rennie, 1993). Similarly, Knight and Cavusgil (1996, p.11) conceptualized born-global firms as being "small, [usually] technology-oriented companies that operate in international markets from the earliest days of their establishment". The advances in technology, the changing market conditions, and the increasing number of managers and entrepreneurs who can explore and exploit international opportunities all contribute to the emergence of international new ventures (INVs). While having become widespread in past 30 years, INVs are an important type of business organizations, and playing an increasingly prominent role in promoting economic growth and generating innovations in world economy (Mudambi & Zahra, 2007; Oviatt & McDougall, 1994; Zahra, 2005).

Although many scholars intensely examined the antecedents, processes, and performance of new ventures' international operations (Zahra, et al., 2000), whether INV is considered a distinct breed of firm is still controversial largely due to the fragmented nature of this line of research by scholars from rather different areas. Many INV studies

are published in marketing journals by examining export or different market entry modes of small high-tech ventures (Bell, 1995; Burgel & Murray, 2000; Coviello & Munro, 1995; Jones, 1999; Knight, 2000; Moen, 2002). By comparing INVs with staged-internationalization firms, these scholars either use new theoretical framework (network theory) or identity unique strategies employed by new ventures in new environments (for instance, niche strategy in technological industries). In contrast, entrepreneurship scholars study INVs with a focus on entrepreneurship perspectives (Bloodgood, et al., 1996; McDougall & Oviatt, 1996; McDougall, et al., 1994; Oviatt & McDougall, 2005). To the large extent, they acknowledge the critical roles of entrepreneurs in the formation of INVs, such as combining resources and recognizing opportunities. Therefore, scholars have not had consensus on whether INV is a distinct breed of firm, which can be illustrated from diverse definitions of early internationalized new ventures. This will inhibit INV as an independent research theme and undermine the advancement of international entrepreneurship. The synthesis and assimilation of the fragmented knowledge is required to further understand INVs (McDougall & Oviatt, 2000), which is the purpose of our study.

Previous literature reviews of INVs successfully identified theoretical framework and empirical methods through content analysis (Coviello & Jones, 2004; Rialp, et al., 2005; Zahra & George, 2002). However, the limitation of those reviews is the failure to categorize determinants of INVs and performance to several general factors. By reviewing existing INV literature, the present study focuses on categorizing determinants of INVs and performance to several entrepreneur, firm and environment factors through

content analysis of influential studies. Through synthesis of literature, we aim to recognize the importance of INV phenomenon and its legitimacy as an area of inquiry. In addition, we provided an updated review of recent literature. Our study includes the following parts. Firstly, by systematically comparing staged-internationalization model and INV literature, we identify how internationalization of SMEs theoretically differs from INVs, and what research efforts are required to make INV as a distinct breed of firm. Secondly, we then survey the determinants of new venture internationalization and performance by focusing particularly on the entrepreneur, organization, and environment factors. Next, we review methodological issues associated with INV research, such as the various measures and recent model developments. Finally, our discussion turns to some significant gaps with aim to advance an important research agenda for future research.

Methodology

A rigorous approach to review a literature stream is meta-analysis, which requires that there is a high degree of agreement across different studies with regard to the measurement of independent and dependent factors and the statistical approach to data analysis (Teixeira, 2001). Because INV studies use diversified measurements and statistical methods, we adopt a narrative approach to systematically interpret the overall understanding of INV literature.

This study firstly defines a methodological process to identify influential INV studies through a combination of electronic means with manual search. Particularly, we search keywords in title, abstract, and full text through *Google scholar and Business*

Source Premier, such as “international new venture(s)”, “born-global”, “global start-up, “international entrepreneurship”, and “early, rapid or accelerated internationalization”. Then the key studies were extracted based upon citation analysis (at least 50 citations is our selection criteria to define influential studies). Our selection process has efficiency to generate large number of high-quality articles and reduce authors’ subjective judgments. Furthermore, books, thesis, commentary, conference proceedings and working papers were removed. Finally, our selected studies were triangulated with previous literature reviews to check whether we missed some important works (Coviello & Jones, 2004; Rialp, et al., 2005; Zahra & George, 2002). Based on this screening procedure, 69 studies are from 19 academic journals and 5 book chapters in past 30 years are selected for further narrative analysis in next section. Although this selection method is not exhaustive due to the citation requirement, our review presents rigorous academic works on INV topic. Table 2.1 chronologically tabulates all 74 INV studies.

The 19 journals cover not only specialized journals but also general outlets in the management fields, including International Business, International Marketing, Entrepreneurship and Management journals. The diverse publishing outlets further suggest that INV topic is cross-disciplinary research, attracting the attention of IB, Marketing, Entrepreneurship, and Strategy scholars. Meanwhile, INV studies have fragmented nature with different views of diversified areas. Table 2.2 presents bibliographic sources of the 74 INV studies.

Table 2.1 Tabulation of 74 Selected Studies on INVs

McDougall	(1989)	McNaughton	(2003)
Rennie	(1993)	Sharma & Blomstermo	(2003)
Oviatt & McDougall	(1994)	Zahra, Matherne & Carleton	(2003)
McDougall, Shane & Oviatt	(1994)	Chetty & Campbell-Hunt	(2004)
Bell	(1995)	Coviello & Jones	(2004)
Coviello & Munro	(1995)	Gabrielsson & Manek Kirpalani	(2004)
Hordes, Clancy & Baddaley	(1995)	Hashai & Almor	(2004)
Oviatt & McDougall	(1995)	Johnson	(2004)
Bloodgood, Sapienza & Almeida	(1996)	Knight, Madsen & Servais	(2004)
Busenitz & Lau	(1996)	Knight & Cavusgil	(2004)
Knight & Cavusgil	(1996)	Oviatt & McDougall	(2004)
McDougall & Oviatt	(1996)	Knight & Cavusgil	(2005)
Roberts & Senturia	(1996)	Oviatt & McDougall	(2005)
Madsen & Servais	(1997)	Rialp, Rialp & Knight	(2005)
Oviatt & McDougall	(1997)	Rialp, Rialp, Urbano & Vaillant	(2005)
Jones	(1999)	Zahra, Korri & Yu	(2005)
Oviatt & McDougall	(1999)	Coviello	(2006)
Autio & Sapienza	(2000)	Coviello & Cox	(2006)
Autio, Sapienza & Almeida	(2000)	Freeman, Edwards & Schroder	(2006)
Burgel & Murray	(2000)	Mort & Weerawardena	(2006)
Harveston, Kedia & Davis	(2000)	Mtigwe	(2006)
Knight	(2000)	Sapienza, Autio, George & Zahra	(2006)
Madsen, Rasmussen & Servais	(2000)	Acedo & Jones	(2007)
McDougall & Oviatt	(2000a)	Aspelund, Madsen & Moen	(2007)
McDougall & Oviatt	(2000b)	Bonaglia, Goldstein & Mathews	(2007)
Shrader, Oviatt & McDougall	(2000)	Fan & Phan	(2007)
Yeoh	(2000)	Fernhaber, Gilbert & McDougall	(2007)
Zahra, Ireland & Hitt	(2000)	Freeman & Cavusgil	(2007)
Bell, McNaughton & Young	(2001)	Kuivalainen Sundqvist & Servais	(2007)
Rasmussan, Madsen & Evangelista	(2001)	Mathews & Zander	(2007)
Moen	(2002)	Mudambi & Zahra	(2007)
Moen & Servais	(2002)	Weerawardena, Mort, Liesch & Knight	(2007)
Yli-Renko, Autio & Tontti	(2002)	Zhou, Wu & Luo	(2007)
Zahra & George	(2002)	Dimitratos & Jones	(2008)
Andersson & Wictor	(2003)	Lopez,Kundu & Ciravegna	(2008)
Bell, McNaughton, Young & Crick	(2003)	Yamakawa, Peng & Deeds	(2008)
McDougall, Oviatt & Shrader	(2003)	Ellis	(2010)

Table 2.2 Bibliographic Sources of 74 Studies on INVs

Journal	No.	Total
Academy of Management Executive	2	2.70%
Academy of Management Journal	4	5.41%
Academy of Management Review	1	1.35%
Advances in Competitiveness Research	1	1.35%
Asia Pacific Journal of Marketing and Logistics	1	1.35%
Entrepreneurship Theory and Practice	4	5.41%
European Journal of Marketing	3	4.05%
Frontiers of entrepreneurship research	1	1.35%
Industrial Marketing Management	1	1.35%
International Business Review	8	10.81%
International Marketing Review	3	4.05%
Journal of Business Venturing	4	5.41%
Journal of International Business Studies	11	14.86%
Journal of International Entrepreneurship	9	12.16%
Journal of International Management	1	1.35%
Journal of International Marketing	8	10.81%
Journal of World Business	4	5.41%
Management International Review	2	2.70%
McKinsey Quarterly	1	1.35%
Others (Book chapters)	5	6.76%
	74	100%

Stage model of internationalization vs. international new ventures

Stage model of internationalization

Traditionally, the internationalization has been described as a gradual development process for SMEs. In their process view of internationalization, Johanson and Vahlne (1977) argued that firms operate domestically, then initiate internationalization processes in later stage, and proceed to international market incrementally. Operating abroad facilitates accumulation and integration of foreign

specific knowledge, further leading to greater commitments to foreign markets. It is expected that experience-based knowledge of foreign countries has impact on international growth. Meanwhile, other studies proposed the innovation-related models (Czinkota, 1982; Zhou, 2004), in which internationalization is viewed as an innovation of the firm. Managers' paucity of knowledge and risk aversion restrains the quick learning of international markets. For example, several development stages presented by Cavusgil's (1980) model, including preexport stage, experimental involvement, active involvement, and committed involvement. These two streams of internationalization literature converge in that both recognize the slow nature of the learning process in internationalization and incremental commitments. Furthermore, they explain why and how small firms initiate export processes leading to internationalization after domestic market matures.

Those stage internationalization theories have gained considerable support in international business. There are two critical characteristics of stage models: firstly, internationalization is an incremental process including different stages (no export, export through agency, sales subsidiary, and manufacturing operation). Secondly, firms initially internationalize into proximity countries and then into countries with greater psychic distance in terms of cultural, economic and political difference (Bell, 1995). Today, the role of psychic distance has been diminishing as global communication and transportation infrastructures improve, and markets become increasingly homogeneous (Czinkota & Ursic, 1987).

The speeding-up of internationalization of small firms with more direct and rapid entry modes has challenged the theories of gradual and slow internationalization process since 1990s. It showed among high technology firms where high R&D costs, shorter product life-cycles and a concentration of the market for high-technology products accelerate the pace of internationalization (Young, 1987). Therefore, "stage" theories become irrelevant in relation to the internationalization of high-technology firms.

INV literature

The emergence of international new ventures has been traced back to the late 1980s. Oviatt and McDougall (1994) and Rennie (1993) documented widespread existence of such form of organizations in many countries and in a variety of industries, even in declining sectors. From inception or in their early history, these new ventures begin to integrate resources from multiple countries and sell their products or services abroad, realizing significant competitive advantage (Oviatt & McDougall, 1994). Other researchers, especially international marketing scholars, label this new phenomenon as "born globals" (Knight & Cavusgil, 1996; Madsen & Servais, 1997; Nee, 1973) or "accelerated internationalization" (Butler & Greene, 2000). For international marketing scholars, born globals refer to those technology-oriented firms which sell outputs after inception. This definition, however, focuses on international sales without considering the leverage of resources from multiple countries. From the view of international marketing, the success of born globals is attributed to quality and value creation through

innovative technology and product design or to a better understanding of particular target customers and to competition in niche market.

There are many factors facilitating the formation of INVs. The demanding of specialized and customized products creates an important source of opportunities for INVs by focusing on niche market. The shorter product life cycles and quick customer demands change make INVs more adaptable and cost effective (Rennie, 1993). Those new market characteristics are caused by some basic change in production technology. New production process technology suggests specialization, customization and niche production are economically sound (Madsen & Servais, 1997). Meanwhile, the development in communication and transportation technology allows firms of any size to easily access to international business information and thus manage business transactions across national boundaries. Those technologies also decrease costs of conducting international business (Madsen & Servais, 1997). Finally, a dramatically increasing number of people have gained international experience and understood foreign culture and operation so they can exploit the opportunities offered by new technology. Thus, competence and ambitions of founders are quite critical in the creation of INVs.

The differences between internationalization of domestic-based SMEs and INVs

Firstly, by following the trajectory of stage model of internationalization, domestic-based SMEs achieve the first export much later and have lower export propensity compared to INVs (Moen & Servais, 2002; Rennie, 1993). Domestic-based SMEs refer to those firms with large volume of revenue from domestic market and only

small portion from international market through export. After establishing a strong base in home markets, those SMEs seek growth potential in geographical countries through export existing products. Thus, the competitive advantages, such as strong skills and financial capabilities, of domestic-based SMEs remain in the home markets. Nevertheless resources and processes creating competitive advantage in domestic markets may not apply to international arena. The existing organization history and culture of domestic-based SMEs inhibit disruptive changes required to operate abroad (Autio, et al., 2000; Sapienza, et al., 2006). In contrast, although INVs have relative young age, they began to start export in earlier years (for example, Rennie (1993) suggested that born globals achieve first export in 2 years), and have higher export propensity and growth rate than domestic-based SMEs. INVs target customers from multiple countries and rely on world markets for success. The products or services may be developed only for international markets without domestic demands at all (Bell, 1995). These INVs are more flexible in responding to emerging opportunities and move fast than domestic-based SMEs because they do not have inertia associated with path-dependence in domestic markets.

Secondly, alternative strategies, such licensing and joint venture, are widely used by INVs for initial foreign market entry to compensate resource constraints (Burgel & Murray, 2000; Oviatt & McDougall, 1994). Interconnected exchange relationships evolve in dynamic, less structured manner among international players. Increased mutual knowledge and trust lead to greater commitment between collaborating firms, facilitating the adoption of alternative entry modes (Bell, 1995; Coviello & Munro, 1995; Coviello & Munro 1997; Madsen & Servais, 1997). It indicates that the internationalization process

is not solely dependent on the behavior of the focal firm but also on resources of collaborators, including both domestic and foreign firms. In other words, internationalization is an individual process, but depends on network established in the industry as well as the position of the firm in the industrial network. Therefore, the internationalization process is much more complex and less structured than earlier stage theories and models suggested.

Thirdly, compared with domestic-based SMEs, INVs require securing resource inputs from multiple countries (Oviatt & McDougall, 1994). International marketing scholars examine new ventures intensively with the focus on international sales and different entry modes, challenging the trajectory of gradual internationalization of stage models (Bell, 1995, Moen 2002). This stream of literature neglected new ventures' access to resources from various countries. In contrast, entrepreneurship literature aims to understand the combination and organization of resources by new ventures to seek opportunities (Oviatt & McDougall, 1995). INVs have to search globally for human resources, such as software and process engineers for success in technology-intensive industries. Another critical challenge for new ventures is raising financial capital. Founders of INVs pursue overseas funding when having difficulties in raising finance domestically. Therefore, they consider internationalizing the new ventures into a country from which they received funding (Oviatt & McDougall, 1995).

Fourthly, most of INVs have international experienced founders or top managers who own specific knowledge of conducting international business (Oviatt & McDougall, 1995; Reuber & Fischer, 1997). INV founders established business relations through

which new ventures could access to resources. At the same time, founders are more alert to international opportunities and use resources from multiple countries owing to competencies developed from their earlier activities, such as social capital, experience, and knowledge acquired from prior professions or education (McDougall, et al., 1994). While export literature also acknowledges the importance of managements' international experience or management's education/experience in increasing export performance (Zou & Stan, 1998). However, entrepreneurs extensively use individual heuristics and beliefs that influence decision-making based upon limited or key experience and beliefs (Busenitz and Lau, 1996; wright, *et al*., 2000). In contrast, managers' decision making is factual-based, involving in "systematic decision-making where managers use accountability and compensation schemes, the structural coordination of business activities across various units, and justify future developments using quantifiable budgets"(Alvarez & Busenitz, 2001). Thus, entrepreneurs and managers interpret international experience rather differently.

Is INV a distinct breed of firm?

After reviewing stage-internationalization model and INV literature, it seems that theoretically international marketing and entrepreneurship scholars recognize tremendous differences between these two types of firms in terms of founding team, strategies, learning capabilities, and industries in which they operate. Whether INV is a distinct breed of firm is still controversial. Empirically, INVs are operationalized by the achievement of a threshold of international sales within several years (typically 6 years)

after the official date of inception. However, INV founders have been exposed to international opportunities much earlier than this date (Fan & Phan, 2007; Madsen & Servais, 1997). When considering founders' past international backgrounds and experiences, INVs still follow the trajectory of stage internationalization firms and going global gradually. Thus, INV is not a unique type of firm from international marketing perspective. In addition, psychic distance concept is less important for cross border business transactions in industries involving specialized knowledge. Founders or managers with such knowledge can easily understand suppliers and customers in different countries to purse early internationalization strategy. In other words, psychic distance that impedes traditional SMEs is overcome by domain-specific familiarity between knowledge specialists (Fan & Phan, 2007). Some empirical evidences suggest that there is no difference in product uniqueness, technological sophistication, and degree of customization or pricing advantages between these two groups of firms (Portes & Bach, 1985)

Existing literature adequately enriches the understanding of INVs through different theoretical lens, unique strategies employed by INVs, and environment factors. However, it is not adequately acknowledged (except international experience of founders) that it is entrepreneurs who analyze environment factors, establish new ventures, accumulate network resources, and pursue unique strategies in multiple countries. Although Oviatt and McDougall (1994) suggested different types of INVs based value-chain activities, many empirical INV studies still focus on export sales as export literature did, which could blur the uniqueness of INV from staged-internationalization firms. It is

insightful to show how INVs surpass their domestic counterparts regarding performance implications, such as survival and growth after navigating environmental changes. Thus, scholars could distinguish INV as a distinct breed of firm only after recognizing the competences of entrepreneurs, identifying different types of INVs, and showing performance advantages of INVs vs. traditional SMEs.

The determinants of new venture internationalization and performance

International entrepreneurship (IE) scholars are inspired by seminal work of Oviatt and McDougall (1994) to explore factors motivating new venture internationalization and performance. There have been huge volumes of studies published in the past 20 years on the topic, many of which appeared on leading journals. As an area of inquiry, INVs have been well recognized as a legitimate field of research. But, the knowledge of the determinants of INVs and performance is fragmented with mixed findings because INV research is cross-disciplinary and requires integration of international business and entrepreneurship theories. This issue becomes more complicated if scholars use different criteria to operationalize INVs. Rialp, et al. (2005) and Coviello and Jones (2004) are excellent studies to review INV literature. Rialp, et al. (2005) presented an overview of this line of research in term of (1) main objective and type of research; (2) theoretical framework/s of reference; (3) methodological issues and (4) main findings and/or conclusions. Meanwhile, Coviello and Jones (2004) systematically examined methodological issues facing international entrepreneurship. Unfortunately, both of these reviews fail to identity relavant variables influencing INVs

and performance. Zahra and George (2002) arrived at a synthesis of the key factors believed to influence international entrepreneurship. But the literature in the area has proliferated in last ten years. It is worthwile to offer an updated review of what has been achieved in the last decatde. Our study aims to provide an overall framework to systhesize the underlying factors of INVs and performance.

Gilbert, et al. (2006) and Sandberg (1986) suggested that the most important antecedents of new venture growth contains the entrepreneur characteristics, resources, strategy, industry, and organizational structure and systems. Jones and Coviello (2005) also suggested three levels of contextual constructs pertaining to INVs: entrepreneur, firm, and environment. By drawing upon extant international business, entrepreneurhsip, and international entrepreneurship, this section aims to review predictors of new venture internalization and performance, particularly based upon those empirial studies. Figure 2.1 presents the predictors of INV and performance.

Entrepreneur characteristics

Human capital. The belief that entrepreneurial firm is an extension of the entrepreneur motivates many scholars to study the character traits that are most likely to influence new venture internationalization (Gilbert, et al., 2006). According to Oviatt and McDougall (1994), INVs are typically founded by a team of individuals with international experiences or some founders are immigrants or have foreign contacts. Several studies empirically confirmed that the direct effects of characteristics, such as international experience and large MNE experience of top management team (TMT), on

	Internal	External
Controllable	**Strategy** Low cost strategy Product differentiation strategy Market differentiation strategy Fit between resource and strategy The scope of product line Niche market strategy **Founder Values and Perceptions** Value on INVs by entrepreneurs Attitudes and Perceptions toward internationalization risk, cost, profit, potential and complexity **Firm entrepreneurial orientation** Innovativeness, risk-taking and proactiveness	
Uncontrollable	**Founder (Team) Characteristics** Founder international experience Founder international education Founder proprietary network relationships Founder industry experience Team size Team tenure Background heterogeneity **Firm's Characteristics and Competence** Firm's size Firm's technology Firm's relational/network resources Firm's financial capital Firm's organization structure and system (Centralization vs. decentralization, organic vs. Mechanistic)	**Industry Characteristics** Industry's degree of internationalization Knowledge and technological intensity Industry dynamism and hostility **Market Characteristics (Domestic and foreign)** The market size, potential and degree of internationalization **Geographic location** Cluster dynamism and competition for resources

Figure 2.1 Determinants of INVs and Performance

pursuing INV strategy and achieving greater internationalization at the time of IPO (Bloodgood, 1995; Mudambi & Zahra, 2007). International experience is employed as well to proxy a new venture's international knowledge assets or international network, which represent important resources for new venture internationalization (Fernhaber, et al., 2009). In addition, it is believed that international experience has indirect effects on new venture internationalization. For example, Reuber and Fischer (1997) argued that international experiences of TMT are closely related to develop foreign strategic partners and to delay less in achieving foreign sales after start-up, and that these strategic behaviors are supposed to positively influence internationalization.

The importance of international experience on new venture internationalization is rooted in Upper echelons theory (Hambrick & Mason, 1984), which argued that top managers are influenced by their experiences, values, and personalities in interpreting the situations they face, which, in turn, affect the decision-making process. International experience is of high value by enabling entrepreneurs to recognize opportunities specific to particular market in which they have such experience (McDougall, et al., 2003). For example, entrepreneurs used to work or study abroad could possess unique information about specific demand of foreign customers, allowing them to combine resources from multiple countries to target those customers. Thus, previous international exposure of entrepreneurs triggers for the formation of INVs. Furthermore, prior working experience in large MNE will provide competences for an entrepreneur's decision-making process, such as calculating risk of a foreign country and choosing appropriate entry mode (Prashantham & Dhanaraj, 2010). Entrepreneurship literature indicates that new product

or service lines established by entrepreneurs are related to the organization in which they previous worked. Finally, international experience makes entrepreneurs build diversified social and professional cross-border network (Reuber & Fischer, 1997), through which they could mobilize the resources required in internationalization. Therefore, an entrepreneur with international experience will obtain more resources and make better decision in internationalization than those without such experience. The empirical evidence showed that entrepreneurs in born global firms had more international working experience than those in gradually internationalizing firms (Harveston, 2000). International experience decreases the psychic distance and perception of uncertainty to specific market; therefore founders do not think national borders as an obstacle.

Although human capital of entrepreneurs is important in new venture internationalization, different human capital plays rather different roles. Some specific knowledge and experience are fundamental for new venture internationalization and performance, such as prior experience or knowledge in related industries. An entrepreneur's management and industry-specific know-how are of substantial importance for new and small firms' internationalization (Westhead, et al., 2001). Management know-how is a form of social capital that has a direct impact on individual economic behavior (Wilson & Portes, 1980). Industry-specific know-how reflects as either working experience in some industries or starting the business in the same industry as an entrepreneur's previous employer. All these specific aspects of know-how are related to export activity by providing detailed knowledge of task environment and allowing entrepreneurs to be familiar with customer base locally, nationally and

internationally and to develop market niche (Westhead, et al., 2001). New ventures can substitute entrepreneurs' experience and know-how for lack of organizational experience(Sapienza, et al., 2006).

However, general human capital factors may fail to play an important role. According to Westhead, *et al.*, (2001), some general human capital factors such as age, gender, education, immigration status, are not significant predictors of new venture internationalization. Surprisingly, some studies show that habitual entrepreneurs (those with prior entrepreneurial or start-up experience) are not related to internationalization either (McDougall, et al., 2003).

Firm factors

Network. New ventures lack resources in internationalization process so that it is difficult to establish operation through ownership. They prefer to leverage resources from network partners to make up their own resources deficiency. According to network perspective, relationships formed between different parties allow resource exchange and influence strategic decision of different participating members. An entrepreneurial firm's role and position within a network of relationship is known to influence new venture internationalization. However, INVs are always early starters in the business segments so that network relationships at firm level are very limited and underdeveloped. Founders have to rely on the members of their close personal network as partners through repeated interaction to alleviate partners' opportunistic behaviors (McDougall, et al., 1994). Traditional stage internationalization models neglected international network

relationships probably because it is believed that internationalization should be the efforts of focal firm. Thus, domestic-based SMEs had to accumulate resources by themselves to support international strategy, extending domestic market for growth. But, INVs relying on world markets for success have to leverage resources from international partners to aggressively exploit opportunities otherwise those opportunities would be sought by others.

By establishing relationship with foreign partners (such as distributors, licensors, joint venture partners, and others), resource-constrained new ventures could accelerate access and entry to new markets, increase foreign competitive position, leverage local market knowledge, obtain initial credibility and solicit further network relationship. As Coviello and Munro (1995) argued, opportunities created though network contacts (both formal and informal) determine an entrepreneurial high-tech firm's foreign market selection and mode of entry. Furthermore, due to resource inadequacy, those firms rely on network linkage for the international market development, such as marketing research, customer education and service, and marketing intelligence. Coviello and Munro (1997) further confirmed that small knowledge-based software firms become internationalized in as little as three years, neglecting market trial, experimentation, evaluation process, which contradicts with stage model of internationalization. Network of relationships shapes international decision and growth of small software firms by applying multiple and different modes of entry simultaneously. Yu, *et al*. (2011) showed that initiation of foreign sales by new ventures is determined by technological and market knowledge acquired from a firm's alliance network. The effect of technological and market

knowledge on the initiation of foreign sales are contingent on network cohesion (more ties among a venture's alliance partners). Meanwhile, relationships with domestic partners motivate new venture internationalization as well. In highly internationalized market, new ventures seek opportunities due to the pulling forces of network relationship. For instance, subcontractors adopt a non-traditional internationalization process by following domestic customers. Bell (1995) suggested that firms have a presence in home market, and then follow domestic clients abroad regardless of the "psychic proximity" of the market.

Knowledge and capability. Many knowledge-intensive firms, including computer software, service or technology-based firms, tend to pursue INV strategy (Coviello & Munro, 1997). These knowledge-intensive firms have specialized value-adding assets and target particular customers in the world simultaneously. Minimal adaptations are necessary for foreign markets because of homogenous customer demands. Moreover, transactions across geographical boundary become feasible because of "domain-specific familiarity" in high-tech industry so that new ventures with specialized knowledge and capabilities are not necessarily tied to geographical markets for success.

The fast-paced learning capabilities of resource-constrained and technology-oriented firms facilitate early internationalization strategy by reducing uncertainty and expediting the accumulation of specific knowledge associated with international market. Knowledge and learning are expected to have an impact on international growth because entrepreneurial firms have to learn new knowledge pertaining to markets in which they

have little or no previous experience, such as foreign business practices and institutional norms. By using knowledge creation and exploitation as competitive advantage, firms could develop learning skills necessary for adaptation and successful growth in new markets. At the same time, internationalizing firms must unlearn the established routines developed from domestic operations that might constrain their capability to pursue a wide range of opportunities. Autio, *et al*. (2000) supported that young age at which a firm initiates internationalization is positively associated with fast international growth because it has "learning advantage of newness" and that knowledge intensity is positively related to international growth. Prior international experience of top management team (TMT) is primary source of international knowledge for new venture, a key ingredient for internationalization. New ventures could exploit international opportunities by accessing external source of international knowledge from alliance partners, venture capital and proximal firms (Fernhaber, et al., 2009). Their findings confirmed that new ventures with limited TMT experiences benefit most from external international knowledge sources. Zahra, *et al.* (2000) examined how internationalization facilitates technological learning of new ventures, and found that international diversity and entry mode increase breadth, depth, and speed of a new venture' technological learning especially when knowledge integration is involved, which are subsequently related to ROE and sales growth. In conceptual framework of capabilities, Sapienza, *et al*. (2006) proposed that early internationalization decreases the probability of survival but simultaneously increase prospects for growth, the differing effects are contingent on organizational age, managerial experience, and resource fungibility (Whether a firm's resources can be used

for other purpose). Their study suggested that imprinting from early internationalization, experiences from foreign market, and resource allocations influence new ventures' learning and adaptation capabilities to exploit foreign opportunities when they face uncertainty and risks in new market environments.

Strategy. Numerous studies on new venture internationalization have validated the importance of a venture's strategies. INVs gain competitive advantage through differentiation strategy, avoiding head to head competition with incumbents. Born-global firms normally refer to "small, usually technology-oriented companies that operates in international markets from the earliest days of their establishment" (Knight and Cavusgil, 1996). Some new ventures develop differentiated products, or offer leading-edge technology products for particular international market segment, and generate value from innovative technology and product design (Bloodgood, et al., 1996; Knight & Cavusgil, 2004; Rennie, 1993). Thus, a large number of studies associate new venture internationalization with high-technology firms in fast-growing, globalized sectors. New ventures could also differentiate from established firms by offering superior services and improving product quality. Finally, through providing specialized and customized products, some new ventures pursue a niche-focused proactive strategy to exploit international opportunities in early history (Bell, 1995; McDougall, et al., 2003; Rennie, 1993).

New ventures are aggressive in achieving market share and growth objectives to recoup the high fixed costs like R&D expenditures (McDougall, et al., 2003). Moreover,

INVs are typically first mover in entering markets with new products. As first movers, new ventures have to educate consumers through intensive marketing and employ multiple channels of distribution in multiple countries (especially hybrid structures, close relationships, network partners, and joint ventures). With limited resources, new ventures employ aggressive strategies to reduce product development cost or achieve growth opportunities. Hence, higher strategic aggressiveness motivates new venture internationalization.

Environment factors

Geographical location. A firm's geographic location affects firm outcomes by providing the resources required to execute a strategic decision. New ventures leverage many resources from industry clustering to internationalize operations. Multinational firms are commonly located within industry clustering (Birkinshaw & Hood, 2000). In an industry cluster in which there is a high presence of foreign firms, co-location increases new ventures' exposure to competition at an international level because of business transactions with foreign firms, and enables them to learn practices and skills necessary to operate in foreign markets. Furthermore, entrepreneurs could respond to opportunities that emerged from foreign firms in industry cluster and then consider operating in foreign markets. Thus, a new venture's presence in industry cluster would enable to establish foreign operations because the pull of an international opportunity is conduit to early internationalization.

New ventures can strengthen the technological base to assimilate new knowledge into their operation by accessing to knowledge spillover from a network of cluster firms. The financial capitals and advices provided by venture capitalists in cluster region are vital for new venture internationalization. Fernhaber, *et al*., (2008) found that there is an inverted U-shaped relationship between the concentration of industry clustering within a geographical location and the venture's internationalization. In the high concentration of industry cluster, new venture internationalization is diminished because many firms compete for the limited resources. Moreover, a new venture is more likely to internationalize by forming international research alliances because higher regional cluster's international alliance intensity has a signaling effect and attract more potential international partners (Al-Laham & Souitaris, 2008). Through informal knowledge spillovers, a new venture in clusters with high presence of international research alliances recognizes the benefits of such cooperative agreements, convinces international partners, and learns how to manage such international agreements.

Market and industry characteristics. It is important as well to understand market and industry characteristics of home and foreign countries in order to understand new venture internationalization. The size of home country market vis-à-vis the potential of the international market is one primary influencer on early internationalization. Firms with small domestic markets are more likely to pursue early internationalization strategy by achieving economy of scale and profits (Rennie, 1993). New ventures choose to supply foreign markets instantly if its production capacity exceeds domestic demand.

Furthermore, the level of competition in both domestic and foreign markets has remarkable impact on new venture price strategy and profit earning capabilities. Therefore, new venture could choose early internationalization strategy accordingly by responding to competition conditions. Finally, industry growth, level of foreign competition of an industry, and industry knowledge intensity influence the decision and performance of international new ventures. Fan and Phan (2007) found that early international decision is negatively associated with home market size and the number of incumbent competitors in foreign markets. A higher level of industry growth increases the survival of a new foreign entrant; while foreign penetration of an industry reduces a new foreign entrant's survival (Mudambi & Zahra, 2007). Internationalization process of new venture becomes much more faster in globally integrated industries in which firms need coordinate their activities and strategies across a variety of countries, such as knowledge-intensive or technology-intensive industries.

Methodological issues of new venture internationalization

Operationalization of international new venture

Oviatt and McDougall (1994) provided a typology of INVs according to different degree of international involvement: the number of value chain activities that are coordinated and the number of countries entered. The simplest form of INV is export and import start-ups, through which entrepreneurs make profit because they identify the imbalances of resource between countries. Global start-ups, the most sophisticated INV, coordinate multiple value chain activities from various geographical countries, including

acquiring resources and selling outputs. Because it is difficult to quantify other value chain activities except international sales, many empirical studies defined INVs by only considering export or export intensity and internationalization speed. Knight (1997) and Madsen *et al.* (2000) adopted at least 25% of foreign sales within 3 years since inception to define "born-globals". Others used at least 10% of foreign sales within the first 3 years of start-up to measure "born-globals" (McDougall, 1989; Kandasaami and Huang, 2000). However, at least 10% of sales from foreign market are appropriate for internationalization of more established firms (Hitt & Bartkus, 1997; Tallman & Li, 1996). Zahra *et al*.(2000) argues that this figure is too high for new ventures that are early in their internationalization so that it is difficult to examine the effects of the varying degree of new venture internationalization on technological learning. Zahra *et al*. (2000) further lowered the criterion of INVs to a minimum of 5 percent of international sales for firms that are 6 years old or younger. A firm is viewed as a new venture if it is six years old or less (Brush & Vanderwerf, 1992), a crucial period in which survival is determined for a majority of companies according to the U.S. Small Business Administration. These measures focus on sales of output in foreign countries and neglect the importance of acquiring inputs from other countries. The employment of these criteria blurred the distinction between INVs and those small exporters.

Some studies use multiple measures to conceptualize new venture internationalization, such as international sales intensity, international asset intensity, international employment, and international scope (Fernhaber, et al., 2008; Fernhaber, et al., 2009; Reuber & Fischer, 1997). The composite indicator could better reflect how new

ventures seek “significant competitive advantage from the use of resources and sale of outputs in multiple countries” (Oviatt & McDougall, 1994) by taking into account the location of new venture’s assets and the numerous countries or continents in which a new venture has international involvement. To measure new venture internationalization, Bloodgood, et al. (1996) assessed whether or not the venture is engaged in multiple value chain activities: inbound logistics, operations, outbound logistics, marketing and sales, and service. Besides the above mentioned composite measure, Yu, *et al.* (2011) used the hazard of a new venture initiating foreign sales (a milestone achieved by the new venture in international expansion) when examining the effects of alliances, time and network cohesion on new venture internationalization. Fan and Phan (2007) employed the production capacity allocated to international markets as a proxy and record when new ventures’ international operation begins. Al-Laham and Souitaris (2008) examined international research alliances established by German biotech new ventures. These latter studies target the specific value chain activities related to new venture internationalization, further deepening our understanding how new ventures use resources from multiple countries rather than only sell output outside home country.

The performance and growth measures of INVs

Facing liabilities of newness, smallness, and foreignness, new ventures have to achieve higher growth otherwise their survival may be significantly reduced. Growth and performance occur in different operations of a firm (Gilbert, et al., 2006), such as financial and non-financial measures, and are key outcomes of new venture international

operation. Measuring performance of an organization is intricate, which is especially true for new ventures. Growth in degree of internationalization is calculated as change of international sales as a percentage of total sales, which is the most commonly used measure (Sullivan, 1994). Several studies use this indicator to demonstrate how new ventures grow and succeed through international expansion (Autio, et al., 2000; Zhou, et al., 2010). In addition, Zahra, *et al.* (2000) selected total sales growth and return on equity as performance measures. In McDougall and Oviatt (1996), return on investment and relative market share are performance measures. Compared with financial performance measures, market share is more reliable because new ventures might strongly aim to market penetration rather than profitability.

Learning and knowledge creation should be one important non-financial performance measure because some new ventures try to perform different value chain activities in multiple countries, the highest level of which is knowledge. In Zahra, *et al.* (2000) study, technological learning is important outcome of international expansion. International diversity and mode of entry influence the breadth, depth, and speed of technological learning. Gilbert, *et al.*, (2006) suggested that employment is a more relevant indicator of performance for high-technology industries because employment indicates the human capital through which new venture's objective is executed and an immediate increase in business.

Survival is an important performance measure for INV research but draws less attention to international entrepreneurship scholars. Compared with established firms, INVs are confronted with a lower likelihood of survival because there is so much

uncertainty in both start-up stage and internationalization process. A few studies explored the survival of early internationalization. In their conceptual framework, Sapienza, *et al.* (2006) pointed out that international growth and survival are two conceptually distinct outcomes related to INVs, and proposed that early internationalization decreases the probability of firm survival but enhances probability of firm growth. Mudambi and Zahra (2007) empirically tested INV survival, and found that INVs have lower survival probability than sequential mode of foreign market entry but there is no difference between these two modes if the firm's competitive strategies are considered.

Data and analysis techniques of recent INV studies

Coviello and Jones (2004) and Rialp, *et al.* (2005) thoroughly reviewed theoretical and methodological developments of INV studies published before 2003. Conventional regressions are widely used from the above reviews; however, recent scholars use more complicated statistical models. For example, Mudambi and Zahra (2007) and Fan and Phan (2007) used Heckman selection model. In first stage, both studies used Probit model to examine new venture internationalization or strategic choice decision (INV or sequential mode of foreign market entry). In second stage, the studies estimated the amount of capacity allocated to international market or survival probabilities conditional upon the decision in first stage. In their studies, Heckman two-stage model considers joint effects of different decisions, and thus make the results more empirically convincing. Yu, *et al.* (2011) and Al-Laham and Souitaris (2008) employed the duration model and event history analysis. In Yu, *et al.* (2011) study, Cox

proportional hazard model estimated the probability of initiating foreign sales; an exponential model is used in Al-Laham and Souitaris (2008) because a firm established different international alliances in the time frame, which is a series of repeated events. Conventional regression models are only appropriate for cross-sectional data to explain a static condition of new venture internationalization, and fail to reflect a dynamic and highly complex internationalization process.

Past INV studies show some degree of "survivor bias" by neglecting unsuccessful new ventures or without considering those new ventures failing to achieve some entrepreneurial events in sample selection. Some studies collect initial public offering (IPO) data from IPO prospectus to examine new venture internationalization (Bloodgood, et al., 1996; McDougall, et al., 2003). The advantage of such data collection method is convenience. However, internationalization strategy adopted by IPO new ventures might have no implications for new ventures that don't or fail to undertake IPO. By the same token, many studies would have distorted results by selecting only successful firms because those survival new ventures have unique characteristics compared with failed firms. Statistically, the estimation of predictors will be biased downward if only successful firms are included (Delmar & Shane, 2006). Therefore, the studies should correct for selection by including both successful and failed firms in drawing valid conclusions. Another important data issue of INV study is left censoring, which occurs when the observed value of international sales variable or others is unknown below a certain value. For example, some new ventures have not achieved foreign sales yet in the examined time frame. In other words, scholars fail to take into account some new

ventures which have similar characteristics as INVs but with missing international sales data. So far, most of empirical studies have used sample firms with international sales data and failed to address data left censoring issue.

Significant research gaps in INV studies

Our review of INV literature suggests that many entrepreneur, firm and environment factors have strong influences on INV strategy and performance. In this section, by drawing on the reviewed studies, we identify significant research gaps and present research questions that encourage future scholars to investigate.

The role of entrepreneur and founding team

Madsen and Servais (1997) suggested a research model in which characteristics of founder, organization, and environment are fundamental for early internationalizing firms. However, most studies pointed out that INV strategy is largely driven by firm-level antecedents or environmental factors, inadequately acknowledging the role of individual entrepreneur or founding team except international experience. Entrepreneur or founding team should be given more weight because they discover, identify and exploit international opportunities, and then execute international strategy. INV research is an interdisciplinary field and should involve the efforts of both international business and entrepreneurship researchers. The field could be further enriched by incorporating the role of entrepreneur and founding team, which helps understand the decision-making and the founding process of INVs.

It is important to examine the role of founding team in early internationalization process of new ventures. INVs require entrepreneurs with rather different experience in founding team to combine resources and opportunities from multiple countries. Ethnic entrepreneurship witnesses earlier transnational entrepreneurial activities of immigrants between home and host countries. Foreign-born entrepreneurs have already established contact and obtained knowledge of foreign market from former occupation, education, and relations (Moen and Servais, 2002). New ventures with immigrant entrepreneurs on founding team could develop "entrepreneurial alertness" to have insight into the value of entering a particular foreign country while others do not. Because foreign-born founders play a crucial role in combining resources and realizing opportunities across different countries, their started new ventures are more likely to go international immediately after inception. Additionally, the ethnically diversified founding team is equipped with complementary knowledge from multiple ethnical backgrounds (Ruef, et al., 2003); such team has more strong market vision, views global markets as a whole, and leverages resources from multiple ethnic groups to seek cross border opportunities. INV is an important research domain in international entrepreneurship that seems independent of diaspora and ethnic entrepreneurship. By incorporating diaspora and ethnic entrepreneurship, future studies could examine foreign-born entrepreneurs and ethnically diversified founding team on new venture internationalization strategy. The study of founding team helps understand the complicated creation process of INVs.

Entrepreneurs possess some leadership styles appropriate for early internationalization strategy of new ventures. The entrepreneur abandons ethnocentric

thinking and has global vision from start. Due to the leadership, the entrepreneur effectively communicates global vision to employees in new ventures and establishes multi-cultural working environment. Scholars can examine in what ways leadership styles of founders facilitate the learning capability of new ventures in foreign markets. Moreover, the entrepreneur plays a central role in the new venture's decision-making process. As new venture internationalizes, the decision-making process increasingly becomes decentralized into foreign countries. So the entrepreneur cannot have tight control over the new venture because the decision-making power is granted to local managers. The question of how the entrepreneur manages international operations becomes more interesting. Previous literature lacks research attention to leadership style of entrepreneurs and organizational structure of INVs.

The competences development of INVs

INV literature suggested that new ventures are motivated to go international at inception by specific competences, such as knowledge, resources, and network. However, it failed to explain how new ventures develop those competences through founders' human and social capital. For example, Autio, *et al*. (2000) found that a new venture's knowledge intensity is positively related to its fast international growth because high-tech new ventures could develop learning capabilities required for rapid adaptation to a foreign environment. How high-tech new ventures develop knowledge assets is a salient issue to understand early internationalization phenomenon. In some cases, INV founders are also specialists with the depth of specific technology knowledge in area under which

new venture operates. In this circumstance, it is important to know how founding team developed new product or service and how their specific knowledge contributes to new venture's knowledge development. In other circumstance, founders have only entrepreneurial knowledge, the "ability to take conceptual, abstract information of where and how to obtain undervalued resources, and how to deploy and exploit these resources" (Gilbert, et al., 2006). Founders with entrepreneurial knowledge have to recognize the value of experts' specialized knowledge. The process in which founders combine specialized knowledge of engineers to generate new knowledge assets for the firm is worth further investigation.

Coviello and Munro (1995) recognized the importance of network of relationship on foreign market selection, entry mode, and growth of small high-tech new ventures. However, the network of relationships in their studies is formal and informal ties of new ventures with foreign partners. In McDougall, *et al*. (1994) study, the entrepreneur's personal ties are more important in securing different resources necessary for early internationalization. Hallen (2008) connected personal ties with new venture network and suggested that founders' human capital and ties determine initial network position of new ventures. INV research should address how founders' human and social capital leads to the establishment of initial international network for new venture. For example, we have to understand the process in which INV founders identify first international distributors, joint venture or joint marketing agreement partners. In addition, extant INV studies did not pay attention to how an initial international tie influences the formation of later

international ties. In sum, INV studies need examine the process in which founders' resources, knowledge, and network become those of new ventures.

Other specific value-chain activities

Reviewing extant literature suggests that INVs exploit international opportunities by opening new outlets for the existing products. The focus on sales of outputs by INVs in multiple countries overlooked the fact that entrepreneur-as-designer draws on new information and communication technologies to develop novel products and create a new market, or transforming existing markets in new ways. It suggests that opportunities may not exist in the environment but are discovered by founders or new ventures, giving an INV competitive advantage (Zahra, 2005). Put differently, in high-tech industries, INVs secure inputs, especially knowledge assets, from multiple countries to develop new opportunities instead of recognizing existing ones. Although, a significant number of studies examined INVs in high-tech sectors (Autio, et al., 2000; Coviello & Munro, 1995; McDougall & Oviatt, 1996; Zahra, et al., 2000), those studies focused on international sales and did not examine the leverage of knowledge resources from multiple countries. Future studies could emphasize INVs' acquisition of knowledge inputs from multiple countries to discover new opportunities.

Because many studies examine INVs *per se*, and foreign sales or foreign sales growth is "dependent variable", our understanding of other specific value-chain activities regarding INVs is largely constrained. A few studies have already made such efforts to extend our understanding of specific activities of INVs. McDougall and Oviatt (1996)

examined strategic change of INVs and performance implication of such change. Coviello (2006) studied network dynamics of INVs in terms of the structural and interactional patterns at various stages of evolution. Al-Laham and Souitaris (2008) explored new venture internationalization by emphasizing formation of international research alliances. By digging into a deeper level, future research inquiries need unpacking specific value chain activities of INVs, which will help uncover their formation, strategy and performance.

Cross-country comparison of INVs

The emergence of INVs has been reported in major developed countries (Rialp, et al., 2005), while some studies examined early internationalized firms in emerging market, such as China (Zhou, et al., 2010; Zhou, et al., 2007). Early internationalization phenomenon is not country-specific; however, there are significant differences between INVs from developed and from emerging countries. INVs from China are typically small exporters or contractors in low-technology manufacturing sectors, which are rather different from high-tech INVs in developed countries employing multiple entry modes. Future studies can compare INVs from diverse countries in terms of founder characteristics, firm strategy, and environment factors.

National culture and institutional settings are closely related to entrepreneurial behaviors in different countries (Bruton, et al., 2009; Busenitz, et al., 2000). Cultural aspects and institutional profiles have different influences on early internationalized firms. For instance, people in countries with higher individualism may be more likely to be

proactive and have innovative ideas, and be willing to take risk. Therefore, those countries nurture more INVs. Future studies can show the similarity and differences in values, attitudes, goals and regulatory and enforcement regimes in early internationalization activities of firms in different countries. Finally, government plays a role in helping new ventures to overcome human and financial capital required in internationalization. The comparison of government policy in encouraging INV activities deserves further research attention.

Unified theoretical framework, definition, and taxonomy

There are diverse conceptual frameworks to explain the formation and performance of INVs from different disciplines (Rialp, et al., 2005; Valdez, 2008). An integrated theoretical model comprising of the entrepreneur, firm, and environment factors is necessary to advance the understanding of INVs, which requires cross-disciplinary research efforts. The definition of INVs needs unifications as well, which not only considers extent, speed and scope of internationalization (Bloodgood, Sapienza, & Almeida, 1996, Knight & Cavusgil, 1996, Zahra & George, 2002), but also includes the coordination of different value-chain activities (Oviatt & McDougall, 1994). Finally, Oviatt and McDougall (1994) suggested that there are four types of international new ventures: export/import start-ups, multinational traders (with a multi-domestic approach), geographically focused start-ups (with foreign operations beyond exports) and global start-ups. The latter two types of INVs received extensive research attentions; they are similar to born-international or born-regional and born-global (Knight & Cavusgil, 1996;

Wong & Ng, 2002). Therefore, a unified taxonomy of INVs is required to account for the discrepancies on the research findings and conclusions.

Conclusion

Internationalization is a vital issue for new ventures by providing growth opportunities in foreign markets. After comparing stage internationalization model and INV literature, we suggested that INV differs significantly from internationalization of traditional SMEs and thus could be a distinct breed of firm. This article identified the determinants of new venture internationalization and performance from the perspective of entrepreneur, organization, and environment factors. The review of literature suggests that the entrepreneur choose early internationalization, and that early internationalization will be successful when the entrepreneur has human and social capital to support such strategy, has corresponding marketing and R&D assets, and operates in an industry or location conductive for early internationalization. Furthermore, this article reviewed methodological issues of existing literature, particularly with a focus on measure and statistical model issues. Finally, we identified the research gaps in INV literature. Existing literature focused on the determinants of INVs at firm-level but the research topic is cross-disciplinary; therefore, to further advance the conceptualization of INVs, the emphasis will be on the role of entrepreneur and founding team. The competence development process of new ventures and other value chain activities are under research as well.

By filling these gaps, this study will improve the understanding of the complex internationalization process and move forward to helping new ventures achieve high performance.

CHAPTER 3
THE NEW ARGONAUTS, INTERNATIONAL NEW VENTURES AND PERFORMANCE IMPLICATIONS

Introduction

International new ventures widely exist in a variety of industries and in many countries (Oviatt & McDougall, 1994), and play an important economic role in innovations and creation of jobs and wealth (Mudambi & Zahra, 2007; Zahra, 2005). These new ventures derive resources from, and sell products and services to, multiple countries (Oviatt & McDougall, 1994). Other researchers describe this new phenomenon as "born globals" (Knight & Cavusgil, 1996; Madsen & Servais, 1997) or "accelerated internationalization" (Preece, et al., 1999). The main argument of INV literature is that entrepreneurial firms pursue an internationalization strategy and reduce the time lag between the firm inception and initiation of international operations. However, traditional staged-internationalization theory suggested that internationalization is an incremental process in which firms acquire foreign market knowledge and make resources commitments to international expansion (Johanson & Vahlne, 1977). According to the process view of internationalization, firms initiate internationalization in later stages because of the slow nature of experienced-based learning and the associated risk in foreign markets. Contradicting traditional internationalization theory, INV studies emphasize entrepreneurial strategic choice of new ventures and the role of founders in making an early leap into international markets.

Extant scholarly inquiries have examined the role of founder in new venture internationalization because of belief that the INV is an extension of the entrepreneur's

international resources and competences (Gilbert, et al., 2006). By focusing on human capital of entrepreneurs, extant studies confirmed the direct effects of international or large MNE experience of top management team (TMT) on an entrepreneurial firm's choosing INV strategy and achieving greater internationalization at the time of IPO (Bloodgood, 1995; Mudambi & Zahra, 2007). This top management team (TMT) international experience can allow new ventures to exploit foreign opportunities and choose early internationalization for growth objective. In addition, international experience could overcome INV's substantial constraints of newness, smallness and foreignness because founders with such experience could build formal and informal network that facilitates leveraging resources from international partners (Fernhaber, et al., 2009). International experience has indirect effects on new venture early internationalization as well. For example, Reuber and Fischer (1997) argued that international experience of TMT is closely related to developing foreign strategic partners and to delaying less in achieving foreign sales after start-up, and that these strategic behaviors are supposed to positively influence internationalization. The importance of international experience on new venture early internationalization is rooted in upper echelons theory (Hambrick & Mason, 1984), which argued that top managers are influenced by their experiences, values, and personalities in interpreting their situations they face, which further affects their decision-making process.

In the past, sociology literature suggested that many immigrants and their children started business in the US, some in ethnic enclaves and others in business serving a wider market (Aldrich & Waldinger, 1990). The growth of minority business was mainly due to

exclusion in majority job market and other disadvantages of minority workers (Wilson & Martin, 1982). By exploiting limited entrepreneurial opportunities, immigrants initially provided ethnic consumer products in the ethnic community of migration country. Ethnic entrepreneurs had an advantage in serving fellow ethnics than native-own competitors because their business "involves a direct connection with immigrants' homeland and knowledge of tastes and buy preferences" (Aldrich, et al., 1985). Research efforts of sociologists were restricted to entrepreneurial activities of immigrants in countries of residence.

While diaspora entrepreneurship literature observed that migrants and their descendants engaged in cross-national entrepreneurial activities between countries of origin (COO) and countries of residence (COR) (Riddle, et al., 2010). Ventures started by immigrant entrepreneurs exist in different forms: *circuit firms* (transferring remittances and goods between the COR and the COO), *cultural enterprises* (selling goods from the COO to fellow immigrants in the COR), and *return-migrant enterprises* (firms established in the COO by entrepreneurs residing outside the country) (Landolt, 2001; Landolt, et al., 1999). To large extent, this stream of literature emphasized diaspora entrepreneurs' investment and entrepreneurial actions in COO (Gillespie, et al., 1999; Liu, et al., 2010). For example, Gillespie, et al. (1999) found that diaspora interest in homeland investment is related to altruism and ethnic advantage, i.e., familiarity with particular ethnic market or with countries similar to home country.

In our study, we focus on early internationalization strategy of new ventures started by immigrants in migration country. This research question is worthy of scholarly

inquiry because early internationalization increases survival of immigrant new ventures. Compared with new ventures started by natives, immigrant new ventures are more vulnerable in accessing resources and achieving legitimacy in COR due to the founders' immigrant status (Aldrich & Waldinger, 1990). We argue that early internationalization to countries with which immigrant founders are familiar opens new geographic markets, enhancing those new ventures' growth. Such growth through early internationalization strategy is fundamental for immigrant new venture survival.

IB scholars suggested the connection between immigrants and the foreign investment decision process in 1960s (Aharoni, 1966). In international entrepreneurship literature, anecdotal evidence has shown the link between immigrant entrepreneurs and INV decision, and suggested that INVs are often established by immigrants (McDougall, et al., 1994). In the "Silicon Valley's New Immigrant Entrepreneurs" report, Saxenian (1999) documented that immigrants run 24% of the technology start-ups in Silicon Valley during the 1980s and 1990s.

> July Systems, which develops technology for selling content such as games and ringtones on mobile phones, was founded by two Indian-born repeat entrepreneurs. While its headquarters are in California's Silicon Valley, close to game developers and mobile-content firms, it develops its products in the Indian city of Bangalore, where the founders have good business connections. In its first five years, July Systems has raised $28m from top US, Indian and Taiwanese investors. (Saxenian, 1999)

These immigrants become transnational entrepreneurs, and established US based ventures by combining low-cost resources in COO with the emerging technology in the US. Immigrant-founded ventures are often global actors from inception, tapping overseas capitals and manufacturing facilities and marketing their

outputs outside US. As suggested by several Duke University researchers' report (Wadhwa, et al., 2007), the immigrant start-ups have become a nationwide pattern in engineering and technology industries. Understanding immigrant entrepreneurs and their founded ventures is not a trivial issue. According to 2003 US Census data, immigrants account for 11.7% of the US population. The immigrant-founded companies produced $52 billion in sales and employed 450,000 workers in 2005.

To further understand the role of immigrants in promoting long-term benefits for the US economy, such as exporting, it is necessary to know what type of business these immigrants are engaged in and performance of their ventures. To establish efficacy of immigrant entrepreneurs, we need to study the role of ethnic composition in new venture early internationalization strategy. Our study aims to answer two fundamental questions:

1. How are immigrants and the US citizen entrepreneurs different in terms of pursuing INV strategy? Starting a new venture entails a decision of who will participate and what they will contribute. The founding team members may be complementary in possessing valuable skills and competences, which are critical for immigrant-started new ventures' survival and growth. Little research, however, examines the founder ethnic composition on new venture early internationalization. Gilbert, et al. (2006) called for research to explore team composition requirements that are best suited for new ventures' domestic or international growth. This research gap cannot be ignored since new ventures could combine international resources in novel ways and create value when immigrant entrepreneurs are part of the founding

team. By linking ethnic composition and early internationalization strategy, our study fills a significant research gap.

2. What factors affect new venture performance? Particularly, we focus on early internationalization strategy, founders' experience and new venture technology. For new ventures choosing INV strategy, the early internationalization-performance link is a central concern in international entrepreneurship literature, and empirical results are inconclusive. New ventures have strategic objectives different from established firms. We explore performance implications of early internationalization. Moreover, knowledge is most strategically important resource for a firm (Grant, 1996). A new venture is established with the entrepreneur's initial knowledge base, while it is required to acquire and develop additional organizational technology knowledge. Both are important for new venture performance.

Current entrepreneurship research focuses on market opportunities (Kirzner, 1997). Thus, the two important concepts in this study, international opportunities and INV strategy, are closely associated with foreign markets. International opportunities refer to identification of foreign customer demand and provide products or services to foreign markets. Consistent with most of existing literature, INV strategy in our study involves initiation of international sales (5%) by a new venture. A conceptual framework for this study is presented in Figure 3.1.

We test hypotheses using longitudinal data of 4,928 new ventures over three-year period in Kauffman Firm Survey and found that the more immigrant entrepreneurs in a new venture's founding team the more likely they are to pursue

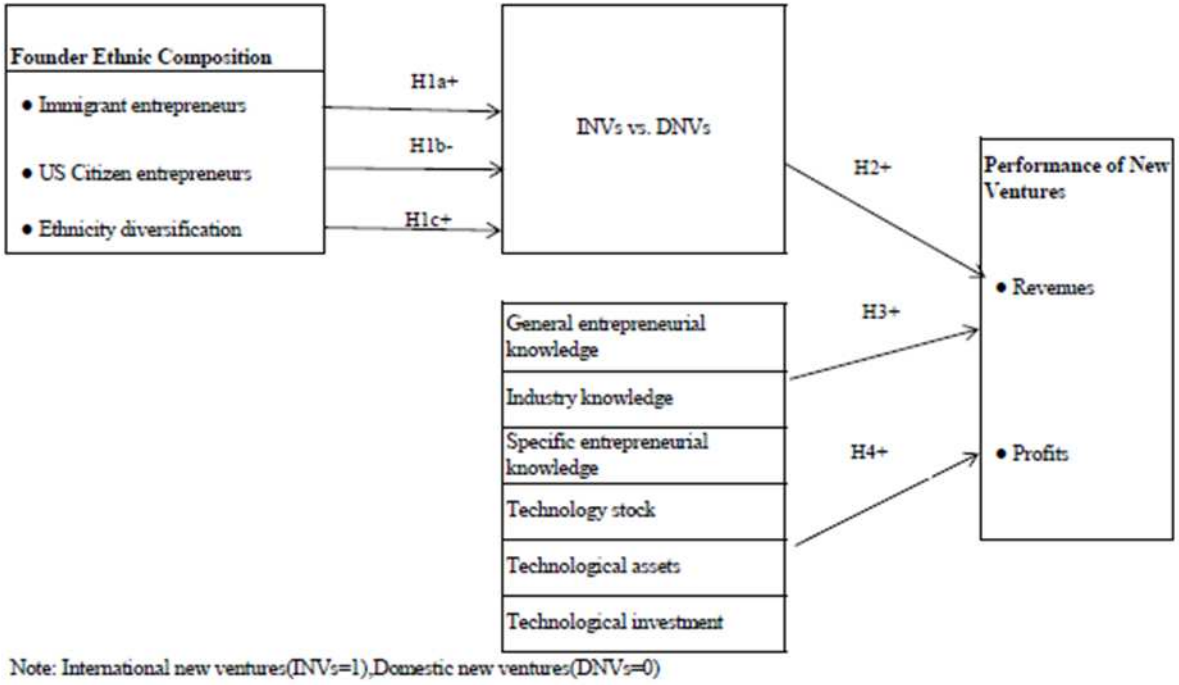

Figure 3.1 Conceptual Model

INV strategy. While, more US citizen entrepreneurs will take advantage of domestic opportunities to pursue DNV strategy. The answer to our second question is that INVs have higher sales than DNVs but there is no difference in profits between them. These findings have theoretical and practical implications.

The significance of this research is fivefold. First, studying determinants of INV strategy is fundamental in international entrepreneurship (McDougall & Oviatt, 2000). This study extends existing inquiries by exploring how immigrant entrepreneurs affect new venture early internationalization. We argue that ethnic advantage and international network facilitate exploration and exploitation of international opportunities. In other words, a founding team with immigrant entrepreneurs has more flexibility to responding to the emerging opportunities from multiple countries. Second, new ventures face various barriers associated with liability of smallness, newness and foreignness (Zahra, 2005). Our study suggested that immigrant entrepreneurs' ethnic advantage could overcome liability of foreignness associated with new venture early internationalization. Put differently, new ventures face less risk due to immigrant entrepreneurs' familiarity with home country market or other culturally similar countries. This argument is similar to Sapienza, et al. (2006) in that founder's international experience could partially substitute new venture's lack of such experience. Third, previous sociology literature only address immigrants' entrepreneurial activities in migration countries (Wilson & Martin, 1982). This research advances ethnic entrepreneurship in that immigrant entrepreneurs identify international market opportunities and sell their output beyond migration country in the early years, which is effective strategy for ethnic enterprises' growth and survival. Fourth,

immigrant entrepreneurs not only create jobs and wealth, but also increase exports and contribute to economic growth of migration countries. Finally, empirically our studies use longitudinal data and analysis to capture dimension of time that is critical to internationalization and entrepreneurial process, responding to recent call by Coviello and Jones (2004) and Rialp, et al. (2005). The samples are significantly dispersed by industry and states so that the results could be generalized.

Theory and hypothesis development

Entrepreneurship literature centers around two fundamental concepts: 1) opportunity exploration and exploitation; 2) the combination and organization of resources (Alvarez & Busenitz, 2001; Shane & Venkataraman, 2000). An entrepreneur identifies a new opportunity through developing a unique idea that others ignored or decided not to pursue. Austrian economists argue that some individuals see the potential value of given resources while others do not (Kirzner, 1979), the ability to recognize a manifest opportunity. However, in the view of Schumpeter (1934), an entrepreneur makes the decision to direct inputs into certain processes rather than other process. In other words, entrepreneurship involves a unique combination of resources-bundling productive factors in some new way, a product, production method or a market.

Entrepreneurial opportunities arise not only from technological or economic environmental dislocations, but also from social contexts (Riddle, et al., 2010; Sarkar, et al., 2001). Entrepreneurs' networks play a vital role in recognizing and exploiting opportunities. According to network perspective, relationships formed between different

parties allow resource exchange and influence strategic decision of different participating members. However, initially it is difficult for new ventures to establish network relationships because they lack desirable resources and reliable records (Hallen, 2008). New ventures rely on the founding members' personal network to access resources, improve competitive position, leverage market knowledge, obtain initial credibility and solicit further network relationships (Hallen, 2008; McDougall, et al., 1994). These individual network relationships were developed through a lifetime of education, employment, and previous entrepreneurial efforts. They include friends, colleagues and members of the same professional community. So, an entrepreneur direct and indirect ties influence the decision of establishing a new venture.

Ethnic composition and INV strategy

One fundamental issue regarding entrepreneurs and their new products is how they view existing opportunities in the environment or discover new opportunities. Founders of both INVs and DNVs develop some new ideas and seek opportunities through combining and organizing resources in new ways. However, INVs founders use international resources and open new geographic markets in the new venture's early history, while DNVs counterparts have insight into value of bundling resources to satisfy customers' demand in domestic markets.

It has been shown that international experience or foreign contacts of entrepreneurs affects the strategy choice of INV vs. DNV (Fernhaber, et al., 2009; McDougall, et al., 1994; Mudambi & Zahra, 2007; Reuber & Fischer, 1997). We argue

that founder ethnic composition is closely related to new venture early internationalization. Because of the linguistic and cultural capabilities as well as the institutional knowledge, immigrant entrepreneurs have advantages in recognizing opportunities that emerge from COO markets. For example, an immigrant entrepreneur who knows local business practices and government regulation in COO could avoid difficulties in dealing with customers and suppliers for cross-border transactions. This ethnic advantage is due to: 1) immigrant entrepreneurs associated culturally similar markets with lower business uncertainty; 2) in a diaspora community, immigrants prefer to target particular ethnic market, which could go beyond COR and includes other countries (Gillespie, et al., 1999). In addition, an immigrant has learned sophisticated skills, new business models, and entrepreneurial systems in COR, which can be integrated with resources of his or her COO. Put differently, immigrant entrepreneurs stimulate international circulation and exchange of technology know-how and market information. Those international entrepreneurs start ventures in COR to access to the large market and/or advanced technology but simultaneously leverage technical and economic resources of COO.

After arriving in COR, immigrants maintain professional and social ties with the home country by migrating circularly or returning regularly to the COO physically and virtually through social network media (Teferra, 2005). Such cross-border connections enable immigrants to collaborate with home country partners, and manage complex business relationship and teamwork across cultural and linguistic barriers. Moreover, in COR immigrants quickly join or create ethnic and professional network or community

(Sheffer, 2006), facilitating information exchange, collaboration and learning based upon a shared language and social context, and trust among ethnic members. For example, Chinese Institute of Engineers (CIE) is one earliest Chinese professional organization in Silicon Valley exchanging engineer information (Saxenian & Hsu, 2001). These transactional entrepreneurs can identify market niches, mobilize knowledge, and link to international market, supporting their entrepreneurial success (Dunning, 2005). Although immigrant-established ventures are new and small, they benefit from founders' ethnic advantage and global contacts, enabling them timely respond to the emerging opportunities in complex environments.

Immigrant-started ventures pursue international opportunities from inception due to founders' idiosyncratic resources and network relationships (Riddle, et al., 2010; Saxenian & Hsu, 2001). When permanently moving to COR, immigrants might lose the ethnic advantage if they fail to update and renew contacts and resources in COO. In other words, naturalization might prevent immigrant entrepreneurs from seeking opportunities in COO and undertake entrepreneurial activities only in COR. While native entrepreneurs focus on combination of resources and realization of opportunities in domestic country. They forgo INV strategy probably due to their perception of high barriers or inability to organize international resources and access to foreign networks. Furthermore, INV strategy could significantly undermine the survival of a domestic new venture if its founders cannot bridge international resources and opportunities.

Ethnic homogeneity has been found among minority and immigrant groups in entrepreneurial founding team literature (Aldrich & Waldinger, 1990; Wilson & Martin,

1982). Solidarity within ethnicities is due to several reasons, such as ecological constraints and discriminatory status expectations (Ruef, et al., 2003). Ethnic homogeneity makes communication between founders easier and fosters agreement in strategic decisions (Ensley, et al., 2002; West Iii & Meyer, 1998). However, ethnic homogeneity may constrain a new venture's capability to leverage resources from, and open markets to, other ethnic groups. However, new ventures with ethnically diversified founders could accumulate more resources and pursue a wider range of international opportunities from multiple ethnic groups, which are most important in making INV strategy choice.

Hypothesis 1a: *A higher composition of immigrant entrepreneurs will be more likely to pursue an INV strategy.*

Hypothesis 1b: *A higher composition of US citizen entrepreneurs will be less likely to pursue an INV strategy.*

Hypothesis 1c: *A composition of more ethnically diversified entrepreneurs will be more likely to pursue an INV strategy.*

INV strategy and new venture performance

Internationalization-performance relationship has been extensively examined in past three decades. The mixed findings, based upon large multinational firms, ranged from a positive linear relationship to U-shaped, inverted U-shaped, or S-shaped relationships (Sullivan, 1994). The internationalization-performance link for INVs is more intricate and less consistent (Autio, et al., 2000; Lu & Beamish, 2001; Zahra, et al., 2000). We aim to compare performance between INVs and DNVs to show an early internationalization advantage.

It has been argued that internationalization is a crucial path for firm growth, particularly when new venture is constrained within domestic market (Knight & Cavusgil, 2004; Lu & Beamish, 2001). Thus, early internationalization provides a catalyst for new venture growth. International orientation of new ventures reflects their overall innovativeness, managerial vision, and proactive competitive posture in pursuing international opportunities (Knight & Cavusgil, 2004; McDougall & Oviatt, 2000; Wiklund & Shepherd, 2003). These new ventures enter new markets with new or established goods and achieve economies of scale. By leveraging the technological competence and capabilities in different markets, new ventures exploit international opportunities and achieve higher returns (Autio, et al., 2000; Zahra, et al., 2000). Furthermore, new ventures have learning advantage because of the entrepreneurial organization culture; they transfer the generated knowledge assets from foreign countries to home market to improve competitive position and performance.

Can new ventures realize the above internationalization-performance benefits? New ventures face resource constraints in making investments to ensure international growth (Oviatt & McDougall, 1994). There are two ways in which new ventures could compensate for resource inadequacy associated with internationalization. New venture founders could strategically use their international resources, contacts, and network especially when there are some immigrant entrepreneurs in the founding team so that the new venture can access to foreign resources and overcome liability of foreignness. Furthermore, new ventures use licensing or joint venture for market entry, reducing costly resource investments through sole ownership (Bell, 1995; Coviello & Munro, 1995;

Coviello & Munro 1997). Thus, internationalization makes new ventures realize greater performance than domestic new ventures.

Hypothesis 2: *An international new venture achieves greater performance than a domestic new venture.*

Knowledge and new venture performance

Knowledge is most strategically important resource for a firm (Grant, 1996). Many empirical studies have examined the relationship between knowledge and performance. We disentangle founders' knowledge from the new venture's technological knowledge. A new venture is established with the entrepreneur's initial knowledge base, while it is required to acquire and develop additional organizational technology knowledge. Both are important for new venture performance.

Founder knowledge

Founders play more crucial roles because their key skills and knowledge are absorbed into new venture's routines, documents, and practices. Founders' knowledge is embodied in their human capital and reflected in their working and start-up experience. Entrepreneurship literature has confirmed the impact of founders' prior start-up or industry experience on new venture performance. Sapienza, et al. (2006) suggested that the founder's experience can influence the performance because it partially substitutes for the lack experience of the new venture.

Founders' general entrepreneurial knowledge (previous start-up experience) significantly enhances new venture performance because the knowledge relevant to

starting new ventures is often tacit, involving learning-by-doing of detailed entrepreneurial process (Gilbert, et al., 2006). In the business creation process, founders have to overcome financial, human and social capital impediments to achieve organizational legitimacy (Aldrich & Fiol, 1994). By applying previous start-up knowledge, habitual entrepreneurs are more likely to navigate through the challenging process, leading to entrepreneurial success and increasing new venture survival. Moreover, there are significant differences between novice and habitual entrepreneurs in the characteristics, motivations, and behaviors. Habitual entrepreneurs could use their existing skills and competencies to pursue new market opportunities (Westhead, et al., 2001); therefore new ventures started by them are more likely to achieve higher performance.

There is also a positive relationship between entrepreneurs' industry knowledge and new venture performance (Westhead, et al., 2001). Entrepreneurship literature argues that individuals with more industry knowledge or experience are more likely to perceive entrepreneurial discovery and have superior ability to successfully exploit entrepreneurial opportunities (Davidsson & Honig, 2003). Unique information about the emerging technology may be insufficient to identity new opportunities; it requires prior market knowledge, how to serve markets, and solve customer problems (Shane, 2000). Entrepreneurs could offer new solutions to market-related issues due to their accumulated industry experience. Moreover, the existing industry knowledge allows new venture founders to access to resources and identify market opportunity to improve new venture performance. Entrepreneurs may accumulate specific industry knowledge through

previous start-up experience in the same industry. In our study, industry knowledge refers to average years of owners' working experiences in the same industry as the current new venture; specific entrepreneurial knowledge means that percent of owner has previous start-up experience in same industry as the current new venture.

Hypothesis 3a: *Founders' general entrepreneurial knowledge is positively related to a new venture's performance.*

Hypothesis 3b: *Founders' industry knowledge is positively related to a new venture's performance.*

Hypothesis 3c: *Founders' specific entrepreneurial knowledge is positively related to a new venture's performance.*

New venture technological knowledge

Technological knowledge is related to "(S)cientific and technical advances on an applied, high-technology product" (Spencer, 2003). New ventures must build a competitive advantage by developing and introducing new products and capturing market share. Technology stock, reflecting the new ventures' existing knowledge base, allows new ventures to apprehend and assimilate new knowledge, which is critical to new ventures' subsequent revenues and profits (Cohen & Levinthal, 1990). According to organization learning theory, learning occurs efficiently in domains close to a prior knowledge base (Cohen & Levinthal, 1990; Spender, 1996). Thus, a new venture's technology stock helps absorb new technological knowledge and determines what it apprehends and learns in future.

R&D employees are most valuable technological assets for new ventures. The human capital of R&D employees allows new ventures to execute the objectives. New

ventures are less likely to emerge in industries characterized by economies of scale and high entry cost (Audretsch, 1991). By pursuing a niche strategy, new ventures enter a particular business segment with innovative technology products. Moreover, R&D employees develop technological knowledge, which increases product quality, reduces costs, and differentiates new ventures' product offering from competitors (Knight & Cavusgil, 2004). Furthermore, technological assets enhance a new venture's reputation and strength and its bargaining power with venture capitalists (Hsu, 2007). Finally, technological assets are difficult to imitate by rivals, increasing a new venture's competitive position and performance.

New ventures exploit market opportunities by developing and introducing unique products, which requires aggressive technology investment and relying on technological knowledge as a source of competitive advantage. For example, in the biotechnology industry firms spend years to invest in R&D to develop new products. This investment helps new ventures to profitably exploit novel technology. At the same time, technology investment enables new ventures to explore and search new inventions that lead to their future success. Furthermore, through technology investment new ventures generate value from innovative technology and distinctive product design (Knight & Cavusgil, 1996; Rennie, 1993). Baum et al. (2001) suggested that differentiation through high quality and innovation increase venture sales, employment, and profit growth. New ventures face not only pressures of newness but also rapid technology and customer demand changes (Zahra & Bogner, 2000). Knowledge-based resources were positively associated with performance in such dynamic environments (Miller & Shamsie, 1996)

Technology stock, technological assets, and technological investment are treated as different concepts in this study. Measured by number of patents owned by new ventures, technology stock reflects their capabilities to absorb additional new technology and represents explicit knowledge of new ventures. Technological assets focus on tacit and specialized knowledge and skills embedded in R&D employees. Finally, technological investment reflects a new venture's dynamic capability to generate new technology through R&D investment.

Hypothesis 4a: *A new venture's technology stock is positively related to its performance.*

Hypothesis 4b: *A new venture's technological assets are positively related to its performance.*

Hypothesis 4c: *A new venture's technological investment is positively related to its performance.*

Methods

Sample

The main data of this study come from the Kauffman Firm Survey (KFS), a nationally representative panel of 4,928 new businesses launched in year 2004. An initial survey was followed up by five additional rounds to study longitudinal behavior of new ventures and their performance. Furthermore, all sample firms are based in the US, ruling out cultural and institutional factors attributed to internationalization behavior of new ventures. KFS provides the following information for new ventures: business characteristics, strategy and innovation, business organization and HR benefits, business finances, and work behavior and demographics of owner(s). All our variables are drawn from the KFS dataset.

In the KFS dataset, a stratified sampling methodology was employed, and observational-level weights have been assigned in the analysis to consider the target population of all new ventures established in the US during 2004 (237,843 new businesses in Dun and Bradstreet Corporation data). The screening procedure excludes any branch or subsidiary owned by an existing business or a business inherited from someone else. Those 4,928 new ventures are dispersed across different states and in different industries, many of which are important for U.S. economic growth, job creation, and innovativeness (Datar, et al., 1997). Such a representative sample increases generalizability of this study.

We employ three rounds of data for our analysis (2007-2009) because "international sales" data were collected from 2007 (2006 data are included to control lagged effect). Though different age ranges have been used to define new ventures in entrepreneurship literature, six years old and younger is the appropriate criterion (Brush, 1995; Brush & Vanderwerf, 1992). According to US Small Business Administration (1992), the first 6 years are crucial because the survival of most firms can be determined in that period. All sample firms meet the definition of new ventures as they are five years old in 2009. The same age reduces the effects of age variance on INV strategy and new venture performance (Autio, et al., 2000).

Model

INV strategy. A discrete Probit model is used to examine the effects of founder ethnic composition on INV strategy choice. This model is an alternative to Logit model

for modeling categorical dependent variables. Although assuming different distributions, these two models have similar outcomes with Probit requiring more complicated computation (Stock & Watson, 2006). The Probit model estimates a new venture's probability to choose INV vs. DNV strategy. The model is represented in the following form:

$$\Pr(Y = 1 | X) = \Phi(X'\beta),$$

Where Pr denotes the probability of INV strategy, and Φ is the Cumulative Distribution Function of the standard normal distribution. *X* is a vector of covariates with coefficient vector β. The parameter β is estimated by maximum likelihood technique. Our study might be associated with reverse causality problem, i.e. international new ventures are more likely to include immigrant entrepreneurs on the founding team. Our three-year panel data (from 2007 to 2009) with one-year lag effect partially alleviate this potential problem.

New venture performance. We use panel data regression because our sample consisted of an unbalanced panel of new ventures over two years (2008-2009) after employing a one-year lag. This technique is appropriate when data have repeated observations on the same unit (e.g., new venture) over time and these repeated observations are correlated. In such a circumstance, panel data method is employed to deal with unobserved individual effects associated with these units. Secondly, we also used the estimated values of international new venture from the Probit model to obtain the estimates of new venture performance in panel data regression (Mudambi & Zahra, 2007). Thirdly, we used Heckman two-stage model to estimate the effects of founder

ethnic composition on INV strategy choice and new venture performance simultaneously (Heckman, 1979). Both second and third methods reduce endogeneity issue arising from the fact that some unobserved factors jointly determine INV strategy and new venture performance (Cantwell & Mudambi, 2005; Fan & Phan, 2007; Mudambi & Zahra, 2007; Tong & Reuer, 2007). In our study, immigrant-started new ventures face severe resource constraints and have fewer opportunities than native-started new firms owing to founders' immigrant status (Aldrich & Waldinger, 1990). Thus, immigrant-started new ventures are more likely to choose early internationalization. But, resource constraints and few opportunities, which are unobserved, could influence new venture performance as well. Therefore, two-stage methods are justified in our analysis.

In the first stage of Heckman method, we model 'international new venture' decision by letting INV_i be dummy variable with 1 international new venture and 0 domestic new venture. Each new venture *i* makes a decision as to whether or not to pursue INV strategy according to an unobserved index variable $INV^*_{i,}$ which is determined by a vector of Z_i and subject to stochastic error e_i.

Selection equation:

$$INV^*_i = \mathrm{Z}_i'\gamma + e_i \quad (1)$$

$$INV_i = \begin{cases} 1 \text{ if } INV^*_i > 0 \\ 0 \text{ if } INV^*_i \leq 0 \end{cases} \quad (2)$$

Where γ is a vector of coefficients, and e_i is the stochastic error.

In the second stage, new venture performance, P_i, is determined by a vector of X and the binary INV_i. β is the corresponding vector of coefficients, and u_i is the associated stochastic error. Heckman two-stage technique implies that, when estimating the

relationship between INV strategy and new venture performance, we must control for the likelihood of new venture selecting INV strategy based on some unobserved characteristics. To address this selection bias issue, an inverse Mills Ratio is generated from first stage as an additional regressor in the second stage.

Regression equation:

$$P_i = \beta' \mathrm{X}_i + \theta \mathrm{INV}_i + u_i \quad (3)$$

In this model, u_i and e_i are jointly normally distributed with zero mean, standard deviation of 1 and σ respectively, and correlated by ρ.

Measures

We construct dependent, independent, and control variables for our study in the following ways. Table 3.1 presents all variables for this study.

Variables: INV strategy model

International new venture (INV). Many studies use at least 10 percent of international sales as criterion to define international new venture (McDougall, 1989). However, this criterion is employed to examine internationalization of more established firms (Hitt & Bartkus, 1997; Tallman & Li, 1996). Zahra et al. (2000) argued that this figure is too high for new ventures that are early in their internationalization. Following Zahra et al. (2000), our study uses a minimum of 5 percent of international sales to decide INV or DNV. This measure is a binary variable (1=INV; 0=DNV). To have sensitivity

Table 3.1 Variables and Definition

	Variable	Definition
1	Owner age	Average age of owner(s)
2	Male owner	Percentage of male owner(s) to total owner(s)
3	College education	Percentage of owner(s) with college education
4	Working hours	Average working hours by owner(s)
5	U.S. citizen entrepreneurs	Percentage of U.S. citizen owner
6	Ethnic diversification	$1-\sum_{i=n}^{n} e_i^2$
7	Immigrant entrepreneurs	Percentage of foreign-born owner
8	Paid owner	Percentage of owner(s) get paid by new venture
9	Lagged revenue	Prior year's revenue
10	Operator owner	Percent of owner(s) also operate new venture
11	Number of owners	Total owner(s)
12	Team dummy	New venture is founded by team=1; otherwise=0
13	Service dummy	New venture offers service=1; otherwise=0
14	Incorporation dummy	New venture is incorporated=1; otherwise=0
15	INVs	INVs=1; DNVs=0
16	Industry knowledge	Average years of working experiences by owner(s) in the same industry as new venture competes
17	General entrepreneurial knowledge	Average number of new ventures started previously by owner(s)
18	Specific entrepreneurial knowledge	Percentage of owner(s) has previous start-up experience in the same industry as current new venture competes
19	Technology stock	Log(patents)
20	Technological assets	Number of R&D employees
21	Technological investment	New venture has R&D investment=1; otherwise=0
22	Competitive advantage	New venture has competitive advantage=1; otherwise=0

Note: This study define entrepreneurs as owners of new venture (Greenfield et al. 1979)

check, we also use 25% international sales and whether a new venture's most customers are located abroad to define INV variable.

Immigrant entrepreneurs: percentage of foreign-born entrepreneurs in new venture.

US citizen entrepreneurs: percentage of U.S. citizen entrepreneurs in new venture.

Ethnic diversification: $1-\sum_{i=n}^{n} e_i^2$

Where e_i is share of ethnicity *i* in founding team, and *n* is the number of ethnicity (1=Hispanic or Latino origin; 2=American Indian or Alaska native; 3=Native Hawaiian or other pacific islander; 4=Asian; 5=Black; 6=White; 7=other).

We also use $1-e_{white}^2$ to capture ethnic diversification.

All these variables indicate the varying degree of founder ethnic composition. We expected that founder ethnic composition could influence INV strategy choice by accessing to international network and resources and recognizing international opportunities.

Variables: new venture performance model

New venture performance. We use two measures for new venture performance: revenues and profits. These two performance indicators are used widely in INV literature (Autio, et al., 2000; Coviello & Jones, 2004; McDougall & Oviatt, 1996; Zahra, et al., 2000; Zhou, et al., 2010). These two measures are not as reliable as market share because new ventures might seek market penetration rather than profitability (Gilbert, et al., 2006; Mudambi & Zahra, 2007). However, it is difficult to obtain market share data based on

the industry or at product category level, especially for new ventures (Zahra & Bogner, 2000). So, we used revenues and profits indicators and obtain data of respondent firms in KFS data. We take the natural logarithm of these two measures. The performance data represent a period of one year after the data on the independent variables, which captures some effects of INV strategy and knowledge.

General entrepreneurial knowledge: average number of new ventures started previously by entrepreneur(s).

Industry knowledge: average years of working experience by entrepreneur(s) in the same industry as new venture competes.

Specific entrepreneurial knowledge: percentage of entrepreneurs that have previous start-up experience in the same industry as current new venture competes.

In entrepreneurship literature, these indicators represent entrepreneurs' human capital (Davidsson & Honig, 2003; Westhead, et al., 2001). The entrepreneur's experience and knowledge are fundamental to firm survival. Previous knowledge will increase individuals' cognitive capabilities to perceive and exploit opportunities, help accumulate new knowledge, and tap into more resources and network (Davidsson & Honig, 2003; Hsu, 2007; Shrader & Siegel, 2007; Westhead, et al., 2001).

Technology stock: log (number of patents owned by new venture).

Technological assets: number of R&D employees in new venture.

Technological investment: new venture has R&D investment in past year=1; otherwise=0.

A new venture's technology stock, technological assets and investment reflect its commitment to development and marketing of new products and support innovation-

based differentiation strategy which profoundly affects new venture performance (Dowling & McGee, 1994; Li & Atuahene-Gima, 2001; Zahra & Bogner, 2000).

Control variables. We also control entrepreneur attributes, team and firm variables that could affect our proposed relationships**.** Extant literature has suggested that founder demographic variables could influence INV strategy choice (Westhead, et al., 2001). Some women are unable to capitalize on foreign market opportunities because of their non-pecuniary goals and the selected industrial sectors (Brush & Vanderwerf, 1992). In addition, education is related to knowledge, skills, problem-solving ability, network and resources (Cooper, et al., 1994), which may alter entrepreneurs' awareness of foreign opportunities. *Entrepreneur age is measured by* average age of entrepreneur(s) in the founding team, indicating general life experience and denser networks. *Male entrepreneur* reflects percentage of male entrepreneur to total entrepreneur(s). *College education* is *captured* by percentage of entrepreneur with college education in the founding team. *Working hours* is the average working hours by entrepreneur(s). *Paid entrepreneur* means the percentage of entrepreneur(s) getting paid by new venture.

This study controls for team- and firm-level effects. *Operator entrepreneur* captures percentage of entrepreneur also operating new venture. *Number of entrepreneur* is total number of entrepreneurs starting the new venture. A new venture has more capabilities to access and configure resources when multiple entrepreneurs started it and actively participated in its operation. New venture size is included (*Lagged revenues),* as measured by new venture's revenues in previous year. *Team dummy* is 1 if two or more active owners founded the new venture. *Service dummy* is 1 if new venture offers service.

Incorporation dummy is 1 when new venture is a limited liability company, a subchapter S-corporation, a C-corporation, a general partnership, or a limited partnership company. *Competitive advantage* is 1 if a new venture has unique or distinctive capabilities compared to their competitors.

Finally, we include nine industry dummies at the two-digit NAICS code level. Industries vary significantly in new venture creation, growth, and internationalization (Brown & Garten, 1994). Also, 50 state dummies are added because state governments have different policies in sponsoring R&D, nurturing new industries, and helping new ventures. Because 2008-2009 data are employed in this study, a year dummy is added to control the national economy, thereby eliminating of effects of the financial crisis on new ventures' performance.

Results

Table 3.2 presents descriptive statistics and correlations for the principal variables. There might be a high correlation among founder characteristics variables. Specifically, the correlation between immigration entrepreneurs and ethnic diversification is 0.60. Thus, multicolinearity could be a potential issue in our study. To solve this issue, we checked the variance inflation factors (VIFs), and found that *immigrant entrepreneurs* variable has the highest VIF value (4.18), which is still below the rule-of-thumb cutoff of 10. We also estimated models by creating an index of founder ethnic composition based on *immigrant entrepreneurs*, *U.S. citizen entrepreneurs* and *ethnic diversification* (aggregating standardized founder ethnic composition variables). The Probit results are

Table 3.2 Descriptive Statistics and Correlations

	Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1	Owner age	42.43	14.53																					
2	Male owner	0.66	0.37	0.32																				
3	College education	0.83	0.27	0.57	0.35																			
4	Working hours	38.17	21.06	0.32	0.31	0.38																		
5	US citizen entrepreneurs	0.07	0.23	0.03	0.06	0.06	0.00																	
6	Ethnic Diversification	0.27	0.41	-0.56	-0.29	-0.47	-0.30	0.17																
7	Immigrant entrepreneurs	0.21	0.35	-0.52	-0.24	-0.46	-0.31	0.61	0.60															
8	Paid owner	0.57	0.45	0.16	0.22	0.24	0.37	0.06	-0.18	-0.16														
9	Lagged revenue	1661680	17700000	-0.02	0.02	-0.02	0.00	-0.01	0.01	0.00	0.00													
10	Operator owner	1.55	0.91	-0.17	-0.13	-0.37	-0.19	0.00	0.10	0.15	-0.09	0.04												
11	Number of owners	2.67	7.66	-0.35	-0.21	-0.39	-0.23	-0.03	0.25	0.28	-0.16	0.03	0.43											
12	Team dummy	0.53	0.50	-0.32	-0.30	-0.58	-0.38	-0.02	0.28	0.29	-0.21	0.03	0.57	0.20										
13	Service dummy	0.86	0.35	0.05	0.06	0.12	0.06	0.00	-0.04	-0.08	0.13	-0.01	-0.07	-0.13	-0.08									
14	Incorporation dummy	0.69	0.46	-0.16	-0.06	-0.07	-0.06	0.02	0.10	0.15	0.05	0.02	0.19	0.09	0.34	-0.04								
15	INVs	0.12	0.32	-0.08	0.02	-0.10	-0.02	0.01	0.06	0.11	-0.02	0.02	0.15	0.14	0.10	-0.26	0.07							
16	Industry knowledge	2.19	0.94	0.42	0.31	0.28	0.32	-0.03	-0.25	-0.29	0.25	0.03	-0.08	-0.21	-0.22	0.14	-0.03	-0.01						
17	General entrepreneurial knowledge	0.46	0.54	0.24	0.16	0.10	0.04	0.03	-0.10	-0.10	-0.01	0.03	0.01	-0.07	-0.05	-0.03	0.01	0.03	0.11					
18	Specific entrepreneurial knowledge	0.17	0.34	0.14	0.15	0.09	0.13	0.04	-0.07	-0.07	0.08	0.04	-0.05	-0.06	-0.08	0.03	0.03	0.01	0.30	0.48				
19	Technology stock	0.07	0.34	-0.20	-0.08	-0.24	-0.14	0.01	0.16	0.21	-0.09	0.00	0.27	0.45	0.12	-0.17	0.08	0.19	-0.09	0.03	0.00			
20	Technological assets	0.93	1.45	-0.18	-0.08	-0.20	-0.04	-0.03	0.13	0.11	-0.03	0.01	0.32	0.26	0.17	-0.09	0.08	0.12	-0.05	0.00	0.02	0.32		
21	Technological investment	0.24	0.43	-0.12	0.03	-0.10	0.02	0.03	0.10	0.11	-0.02	0.04	0.16	0.17	0.08	-0.14	0.07	0.16	0.01	0.08	0.10	0.27	0.27	
22	Competitive advantage	0.71	0.46	-0.04	-0.02	-0.04	0.03	0.02	0.01	0.03	0.02	0.00	0.09	0.07	0.05	0.00	0.03	0.10	0.00	0.03	0.02	0.12	0.13	0.17

The Probit results are very consistent with those reported in Table 3.4. Thus, multicolinearity is not a concern for our analysis.

Our study examined the relationship between knowledge and new venture performance. It is important to identify the role of different level of knowledge accessed by new venture. Through principal component factor analysis, two factors with eigenvalue greater than unity are extracted to reduce the possible higher correlation between knowledge variables. They are defined as "founder(s) knowledge" and "new venture technological knowledge" based upon orthogonal varimax rotated factor loading matrix. Table 3.3 presents factor analysis results. *New venture technological knowledge* accounts for 20.8% of total variances. Technology stock, technological assets and investment have high loadings on the first factor. *Founder knowledge* factor explains 19.6% of total variances. General entrepreneurial, industry, and specific entrepreneurial knowledge variables load significantly on the second factor. These two factors explain 40.44% of total extracted variances. The communalities of the individual variables are very high as well, ranging between 50 and 70 percent.

Estimating INV strategy choice

Table 3.4 reports the results of Probit models testing the INV strategy choice hypotheses. Model 1 is the baseline model, including only the control variables. In this model, 5% international sales are used to determine INV vs. DNV strategy (INV=1 if international sales are more than 5% of total sales). In model 2, the main interest variables are added. Models 3 and 4 define INV strategy by 25% international sales and whether new venture's most customers are located abroad.

Table 3.3 Factor Analysis of Knowledge Variables

	Factor analysis/correlation	Number of obs = 2,396
	Method: principal-component factors	Retained factors=2
	Rotation: orthogonal varimax (Kaiser on)	Number of params=15

Factor	**Variance**	**Difference**	**Proportion**	**Cumulative**
Factor1	1.67	0.10	0.21	0.21
Factor2	1.57	.	0.20	0.40

LR test: independent vs. saturated: Chi2(28) = 1,266.28 Prob>chi2 = 0.00

Rotated factor loadings (pattern matrix) and unique variances

Variables	**Factor 1**	**Factor 2**	**Uniqueness**
Technology stock	0.60		0.64
Technological assets	0.70		0.51
Technological investment	0.59		0.62
University linkage			0.85
General entrepreneurial knowledge		0.54	0.70
Industry knowledge		0.69	0.49
Specific entrepreneurial knowledge		0.77	0.40
College education	-0.51		0.56

(Blanks represent abs (loading) <.5)

Table 3.4 Probit Results (Dependent Variable: 1=INVs; 0=DNVs)

	INV(5% International sales)	**INV(5% International sales)**	**INV(25% International sales)**	**INV(Most customers locate abroad)**
Variables	**Model 1**	**Model 2**	**Model 3**	**Model 4**
Intercept	0.35	-0.24	-5.73	-0.24
	(0.52)	(0.54)	(175.52)	(0.60)
Owner age	(0.00)	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)
Male owner	0.20*	0.23**	0.17	0.28*
	(0.09)	(0.09)	(0.12)	(0.11)
College education	-0.06	0.18	0.45+	0.11
	(0.18)	(0.19)	(0.25)	(0.24)
Working hours	0.00*	0.00**	0.00+	0.01**
	(0.00)	(0.00)	(0.00)	(0.00)
Paid owner	0.00	0.01	0.13	-0.04
	-0.07	-0.07	-0.10	-0.09
Lagged revenues	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00
Operator owner	0.10**	0.12**	0.16***	0.12**
	(0.04)	(0.04)	(0.04)	(0.04)
Number of owners	0.01*	0.01	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)
Team dummy	0.20*	0.20*	0.18	0.10
	(0.09)	(0.09)	(0.12)	(0.11)
Service dummy	-0.79***	-0.79***	-0.36***	-0.54***
	(0.08)	(0.08)	(0.11)	(0.10)
Incorporation dummy	0.07	0.04	-0.02	-0.08
	(0.07)	(0.07)	(0.10)	(0.09)
Industry dummy	Yes	Yes	Yes	Yes
State dummy	Yes	Yes	Yes	Yes
Year dummy	Yes	Yes	Yes	Yes
Immigrant entrepreneurs (H1a)		0.61***	0.93***	0.91***
		(0.15)	(0.18)	(0.17)
US citizen entrepreneurs (H1b)		-0.42*	-0.53*	-0.50*
		(0.18)	(0.21)	(0.20)
Ethnic diversification (H1c)		0.05	-0.06	-0.14
		(0.10)	(0.14)	(0.13)
n	4044	4039	4065	3762
Pseudo R2	0.14	0.15	0.14	0.15
Chi2	408.15	430.07	204.81	262.86
p	0.00***	0.00***	0.00***	0.00***

Standard errors in parentheses + p <0.1 * p<0.05 ** p<0.01 ***p<0.001

Hypothesis 1a states that a high of composition of immigrant entrepreneurs will be more likely to pursue an INV strategy. Models 2-4 in Table 3.4 show that the coefficients for this variable are positive and significant ($p<0.001$), suggesting an increase of immigrant entrepreneurs multiplies the probability of INV strategy. The probability associated with z-score for immigrant entrepreneurs variable in these three models are 0.73[=norm (0.61)], 0.82 and 0.82. The results suggested that immigrant entrepreneurs play greater role for higher degree of new venture internationalization. Our hypothesis 1a is confirmed in all the models.

Hypothesis 1b indicates that a higher composition of US citizen entrepreneurs yields a lower possibility of pursing INV strategy. The coefficients for this variable are negatively significant in models 2-4 ($p<0.05$). The associated probabilities for this variable are 0.37, 0.30 and 0.31 respectively. This hypothesis is supported in all models.

Hypothesis 1c proposes that a composition of more ethnically diversified entrepreneurs will increase the likelihood of pursuing INV strategy. Both of ethnic diversification measures are used in our tests. Surprisingly, the coefficients for this variable are not statistically significant in any of the models ($p>0.1$). The reported diversification measure in Table 3.4 is 1-e^{2}_{white}. Thus, Hypothesis 1c is not supported.

Estimating INV strategy and new venture performance

Table 3.5 presents the regressions of new venture performance. In Models 1-3, the performance measure is revenues; in Models 4-6, it is profits. In addition, fixed effects model is used in Models 1 and 4, with INV binary variable (5% international sales is the

Table 3.5 Regressions of New Venture Performance

	DV: Revenues			DV: Profits		
Variables	**Model 1**	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**
Intercept	12.73***	8.69***	12.69***	12.13***	11.70***	10.98***
	(1.93)	(1.83)	(1.80)	(1.88)	(1.85)	(1.90)
Number of owners	0.05***	-0.02*	0.00	0.09***	0.02	0.03
	(0.01)	(0.01)	(0.01)	(0.02)	(0.03)	(0.03)
Service	0.30*	2.48***	2.39***	0.04	1.63***	1.51***
	(0.14)	(0.20)	(0.19)	(0.24)	(0.35)	(0.34)
Competitive advantage	0.06	0.03	-0.02	0.10	0.05	-0.01
	(0.10)	(0.10)	(0.10)	(0.16)	(0.17)	(0.17)
Lagged revenue	0.00***	0.00**	0.00**	0.00**	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00
Industry Dummy	Yes	Yes	Yes	Yes	Yes	Yes
State Dummy	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes
INVs (H2)	0.51***	3.71***	0.29*	0.30	2.39***	0.26
	(0.14)	(0.22)	(0.14)	(0.23)	(0.39)	(0.24)
Founder(s) knowledge						
General entrepreneurial knowledge (H3a)	0.12	0.05	0.06	0.13	0.04	0.05
	(0.09)	(0.10)	(0.10)	(0.16)	(0.17)	(0.17)
Industry knowledge (H3b)	0.29***	0.30***	0.31***	0.20*	0.25**	0.26**
	(0.05)	(0.05)	(0.05)	(0.08)	(0.09)	(0.09)
Specific entrepreneurial knowledge (H3c)	0.43**	0.42**	0.40*	0.60*	0.72**	0.67*
	(0.15)	(0.16)	(0.16)	(0.25)	(0.27)	(0.27)
New venture Knowledge						
Technology stock (H4a)	-0.10	-0.21	-0.16	-0.56+	-0.31	-0.31
	(0.16)	(0.15)	(0.16)	(0.33)	(0.37)	(0.37)
Technological assets (H4b)	0.10***	0.12***	0.11**	0.18**	0.19*	0.18*
	(0.02)	(0.03)	(0.03)	(0.06)	(0.08)	(0.08)
Technological investment (H4c)	0.18+	0.05	0.06	-0.04	-0.11	-0.10
	(0.11)	(0.11)	(0.11)	(0.18)	(0.20)	(0.20)
IMR			-4.96***			-3.12***
			(0.29)			(0.50)
n	2,095	1,724	1,700	1,482	1,207	1,193
R2	0.17	0.29	0.30	0.10	0.16	0.16
Adj. R2	0.15	0.27	0.28	0.06	0.11	0.11
F	6.18	10.93	11.20	2.42	3.41	3.30
p	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***

Standard errors in parentheses + p <0.1 * p<0.05 ** p<0.01 ***p<0.001

criteria to define INV vs. DNV). Estimated probability from INV strategy choice is plugged in Models 2 and 5. Heckman two-stage model results appear in Models 3 and 6.

Hypothesis 2 predicts that an international new venture achieves higher performance than a domestic new venture. Models 1-3 show that the coefficients for INV is positive and significant ($p<0.001$ and 0.05 respectively), suggesting that international new ventures have higher revenues than domestic new ventures. While, the results in Models 4-6 are mixed, with only estimated probability of INV in Model 5 significant. This suggests that an international new venture does not necessarily achieve higher profits. The finding is consistent with that of Mudambi and Zahra (2007) in that there is no survival difference between INV and sequential model after endogenizing strategy choice. Therefore, our hypothesis 2 is partially supported.

Estimating knowledge and new venture performance

Founder knowledge. The estimates of the relationship between knowledge and new venture performance appear in Table 3.5. Hypothesis 3a predicts that founders' general entrepreneurial knowledge will increase a new venture's performance. Models 1-6 suggests that the coefficients for this variable are not significant ($p>0.1$), indicating that founders' general entrepreneurial knowledge does not have a significant impact on new venture revenues and profits. Our Hypothesis 3a is rejected. Hypothesis 3b indicates that founders' industry knowledge is positively related to a new venture's performance. This hypothesis is supported as the coefficients for this variable are significant in all Models 1-6. Hypothesis 3c is also supported in all Models 1-6 ($p<0.01$ and <0.05 respectively). It

proposes that founders' specific entrepreneurial knowledge will increase a new venture's performance.

New venture technological knowledge. Hypothesis 4a suggests that a new venture's technology stock is positively related to its performance. The coefficients in Models 1-6 are negative and insignificant however. Thus, our Hypothesis 4a is not supported. Hypothesis 4b indicates that a new venture's technology assets positively influence its performance. This hypothesis is confirmed in Models 1-6. Hypothesis 4c argues that a new venture's technology investment is positively related to its performance. In Models 1-3, the coefficients are positive but not significant. The signs of coefficients in Modes 4-6 become negative but not significant either. Thus, Hypothesis 4c is rejected.

The self-selection parameter (Mill's Ratio) is negative and significant ($p < 0.001$), reflecting the covariance between the error terms in the equations (Dolton & Makepeace, 1987). It suggests that INV decision and firm performance could be influenced jointly by some common unobserved factors so that selection model should be used to correct selection bias (Cantwell & Mudambi, 2005; Fan & Phan, 2007; Mudambi & Zahra, 2007; Tong & Reuer, 2007).

Robust test

We tease out naturalized US citizen entrepreneurs from immigrant entrepreneurs variable. The results are consistent with those findings in Table 3.4. In addition, some evidence indicates that a high composition of naturalized citizen entrepreneurs is positively related to DNV but not to INV strategy (5% international sales model).

Therefore, our findings suggest that after naturalization, immigrants might lose their ethnic advantage because of the failure to renew COO contacts and resources, which reduces the probability of pursuing an INV strategy. Finally, because we do not find the relationship between ethnically diversified founding team and INV strategy using two different diversification measures, the robust check does not support the relationship between ethnically concentrated founding team and INV strategy either. As robustness tests, we evaluated but do not report the above results in the table; results are available upon request.

Discussion and conclusion

This research aims to understand how founder ethnic composition influences the choice of INV strategy and then examine INV strategy and the role of founder and new venture technological knowledge on new venture performance. The varying degree of founder ethnic composition provides different international network and resources, and facilitates the recognition of international opportunities. A new venture with more immigrant entrepreneurs in the founding team has an advantage in pursuing early internationalization strategy and generates higher revenues than a DNV. Knowledge is closely associated with new venture performance as well. We distinguish between founder and new venture technological knowledge. Founder knowledge could partially substitute for the lack of experience of new venture (Sapienza, et al., 2006). New venture technological knowledge helps adopt differentiation strategy by developing unique products, thus generating economic rents from technological innovation.

Unlike previous studies in which researchers focus on the role of international experience of TMTs on a new venture's early internationalization, our study demonstrates that ethnic composition plays a role in a new venture's internationalization strategy. In particular, domestic entrepreneurs are related to DNV strategy; while immigrant entrepreneurs increase the likelihood of choosing INV strategy. Immigrant entrepreneurs have an ethnic advantage in bridging information and resources flow across national boundaries. A new venture undertakes early internationalization initiatives because its immigrant founders can combine international resources to seek the emerging opportunities. In addition, immigrant entrepreneurs' linguistic and cultural capabilities and institutional knowledge reduce the risk of conducting business in foreign countries. However, new ventures with only native founders must learn foreign culture and market knowledge, inhibiting their early internationalization efforts. A surprising result from this study is the lack of support for ethnic diversification effect. One possible explanation is that although new ventures could access to resources from, and open markets to, multiple ethnic groups, an ethnically diversified team might have difficulty in having consensus on internationalization decision-making and resource allocation (Ensley, et al., 2002; West Iii & Meyer, 1998).

Our findings concerning performance of INV strategy are mixed but rather interesting. INVs achieve higher revenues than DNVs but are similar in profits. Internationalization presents a new venture with growth opportunities (Gilbert, et al., 2006; Sapienza, et al., 2006). By leveraging its resources and capabilities, a new venture increases productive opportunities for a new market. Further, the venture could learn

knowledge of foreign markets through experience and therefore effectively compete and cooperate in foreign markets. This accumulated experience, resources and network will facilitate further international expansion. Thus, internationalization builds a strong revenue base for new venture. Meanwhile, selection of performance measures for new ventures is controversial in INV literature. *Sales* are widely used indicator of new venture performance. Consistent with these arguments, our evidence demonstrates that INVs achieves higher revenues. The fact that there is no difference in term of profits between INV and DNV suggests that profitability may not be a good indicator of performance. On one hand, new ventures emphasize the marketing efforts in customers' acceptance of their products or services so that profitability is not main objective (Baum, et al., 2001). Our findings suggest that revenue growth through early internationalization to countries where founders are familiar with will increase a new venture's likelihood of survival in COR. On the other hand, in the early internationalization process, new ventures have to invest heavily to learn and adapt in new environments. Higher learning costs may counteract the increasing sales from internationalization, leading to no significant difference in profitability between INV and DNV. Finally, we use two-year data to test the performance, which might constrain the explanatory power of our models.

In strategy literature, it is common to examine knowledge and firm performance. Our research examines the different roles of founder and new venture technological knowledge on new venture performance. Entrepreneurship literature suggests that founders' human capital is fundamental for new venture performance (Davidsson & Honig, 2003; Shrader & Siegel, 2007; Zarutskie, 2010). Regarding founder knowledge,

we found that industry knowledge and specific entrepreneurial knowledge enhance new venture performance. Entrepreneurial success could be achieved in an area where new venture founders have competences. Their prior knowledge of a particular industry helps new venture recognize related industry opportunities. Our empirical findings are consistent with the findings of Shane (2000). However, general entrepreneurial knowledge, reflected by previous start-up experience in different industries, has no impact on new venture performance. Put differently, diversified start-up experience may prevent entrepreneurs from focusing on specific market opportunity, which required specific and deep knowledge to identify particular customer demand and to serve such market. This is in line with firm diversification-performance literature, arguing that related diversification is positively related to firm performance while unrelated diversification has opposing effects (Amihud & Lev, 1999; Lane, et al., 1998).

A new venture's technology is typically positively associated with the performance (Dowling & McGee, 1994; Zahra & Bogner, 2000). We found that a new venture's technology assets, especially R&D personnel, are very important in increasing new venture performance. Technology stock refers to new venture's prior related knowledge and reflects its ability to "recognize the value of new, external information, assimilate it, and apply it to commercial ends" (Cohen & Levinthal, 1990). It should be critical for new venture sales and profits through absorbing new knowledge. However, technology stock does not influence new venture performance. Literature suggests that the relationship between product innovation strategy and firm performance is mixed; the inconsistent results may reflect the fact that our study does not consider the moderating

effects (Li & Atuahene-Gima, 2001). Finally, there is no hypothesized relationship between technology investment and performance. This study uses one-year lag between technology investment and performance variables. Our tentative interpretation is that it might take longer time for the technology investment to influence firm performance.

Contribution

Ethnic composition of founding team remains underexplored in INV literature. Theoretically, our study extended research on international entrepreneurship by linking ethnic composition and INV strategy choice. New ventures face obstacles associated with liability of newness, smallness and foreignness (Zahra, 2005). Immigrant entrepreneurs could help new ventures to overcome these obstacles in internationalization because of their ethnic advantage and international network. Immigrant entrepreneurs' familiarity with foreign countries could reduce their new ventures' difficulties of conducting business abroad. In addition, the international networks of immigrant entrepreneurs help new ventures to access to international resources and recognize transnational opportunities. Thus, immigrant entrepreneurs' knowledge, experience and network could substitute the lack of knowledge, experience and network by new ventures in early internationalization efforts. Our study particularly emphasizes the role of immigrant entrepreneurs on INV strategy choice.

Early internationalization to countries that founders are familiar with is critical to immigrant-started new ventures by increasing the revenues through acceptance of their products and services in international markets. Such growth increases the survival of

immigrant new ventures in COR which have higher barriers in achieving legitimacy than native-started new ventures. For immigrant new ventures, growth is more important than profits in early internationalization. Our mixed findings regarding INV performance demonstrate that immigrant new ventures adopt early internationalization strategy to correct their weakness in COR and compete effectively with native ventures although they sacrifice profits.

Previous studies confirmed that immigrant entrepreneurs play an eminent economic role in creating jobs and wealth. Our findings imply that immigrant entrepreneurs are also associated with an increase in export because of the early internationalization strategy. In the long term, supporting immigrant new ventures strengthen a country's economic growth. Methodologically, our study has implications as well. The employment of longitudinal data is encouraged in INV literature (Coviello & Jones, 2004; Rialp, et al., 2005) because early internationalization is the result of a dynamic and highly complex process. This study responds to the recent calls to employ longitudinal methodologies. Moreover, our results, based on large-scale sampling dispersed by state and industry, improve generalizability.

Implications for entrepreneurs and policy makers

Recent studies show that new ventures can achieve growth opportunities by quickly tapping into foreign markets (Autio, et al., 2000). International growth opportunities significantly increase new ventures' survival (Gilbert, et al., 2006). Like other new firms, immigrant-started ventures have limited resources, which are

compounded by their founders' immigrant status. Thus, these ventures have fewer opportunities and become less likely to access to resources in COR than those founded by native entrepreneurs. However, through early internationalization, immigrant-started new ventures have more growth opportunities in international market, which increases their survival. Therefore, early internationalization to countries where founders are knowledgeable is crucial for immigrant new ventures. Such strategy not only improves immigrant new ventures survival, but also increases their competitive position compared to native-started new ventures. To realize the benefits of early internationalization, entrepreneurs should consider the ethnic composition of their founding team seriously. A new venture with foreign-born entrepreneurs on the founding team has more flexibility to exploit international opportunities emerging from multiple countries than the established firm rivals that relies on organizational routine for opportunities scanning. Immigrant entrepreneurs reduce obstacles associated with new ventures' unfamiliarity of foreign business practices and institutional norms as well as lack of general experiential knowledge of foreign competition. Furthermore, new ventures can recognize foreign opportunities better and exploit them through founders' international network. Entrepreneurs should be especially cautious about ethnic diversification of their founding teams. An ethnically diversified team may foster disagreements in INV strategy choices.

Immigrant entrepreneurs contribute to economic growth of COR by creating jobs and wealth but also by boosting exports. Compared with domestic entrepreneurs, immigrant entrepreneurs face more challenges in new venture creation. For example, immigrant entrepreneurs have limited channel to acquire financial resources so they

obtain funding from their ethnic group. Policy makers should make institutional changes and establish business incubators to help ethnic entrepreneurs overcome financial and management impediments. These efforts will improve new venture launches and success of ethnic entrepreneurs and promote international entrepreneurship.

Limitations and future research

Our study was based on new ventures in the US which accepts more legal immigrants than other countries. Entrepreneurship and innovation are fundamental to long-term growth of the US economy. Many foreigners pursue higher education in science and engineering after arrival, and start up new business after graduation or many years' working in high-tech industries. In addition, it is believed that US firms achieve growth by internationalization strategy with establishing foreign operations by large firms and engaging in exports by small firms. Thus, immigrant entrepreneurs play important roles in early internationalization of their ventures in US. It remains unclear whether the findings of this study can apply to new ventures in other countries.

The second limitation is that our main founder ethnic composition variable, *immigrant entrepreneurs*, is measured by the percentage of immigrant entrepreneurs in founding team. We don't know how first-generation immigrant entrepreneurs are different from second-generation in pursing INV strategy. First-generation immigrants keep close contact with home country so that they have ethnic advantages to bridge international opportunities. However, second generation immigrants might not be able to

leverage unique cultural advantages and cross-border social network as their parents because of permanent migration to COR.

Thirdly, immigrant entrepreneurs have ethnic advantages to overcome the liability of foreignness associated with their ventures internationalization to home or other culturally similar countries. However, we don't know how immigrant's ethnic advantages affect new venture's entry into other culturally unrelated countries. For example, a Chinese immigrant's nationality may not help his venture's early internationalization to African countries besides he has experience in making international decision. We expect that the complementarity of ethnic advantages among different ethnics in founding team is useful in adopting INV strategy. However, our empirical findings do not support this argument.

We see several avenues for additional research. While existing INV studies mostly used international sales to define INV and neglect how those new ventures secure inputs from multiple countries. In addition to the INV strategy choice, other measures of internationalization are encouraged, such as international sales intensity, international asset intensity, international employment and international scope. These indicators reflect how new ventures use resources and sell outputs from multiple countries simultaneously. Other outcome variables of new venture performance such as market share and employment growth are also important to investigate. These two measures coupled with sales growth are most important performance measures in entrepreneurship literature (Gilbert, et al., 2006). Different performance measures suggest that new ventures have different strategic objectives, e.g. new ventures may seek market share over early profits.

Furthermore, future studies could consider unsuccessful new ventures to correct for survival bias, strengthening our confidence in the conclusion.

It would be more fruitful to study immigrant entrepreneurs' ethnic advantages and how an individual international network affects the choice of entry country and mode. For example, does familiarity with the COO environment affect an entrepreneur's entry mode choice such as wholly owned subsidiary? This question deserves additional research inquiry because we have limited knowledge about how new ventures and established firms differ in entry mode choice. Entry modes for established firms are well developed, but those for new ventures are rarely empirically evaluated. Additionally, our study assumes that immigrant entrepreneurs have ethnic advantage and international network. Future study could directly measure and test those variables. For instance, it would be interesting to explore how initial individual international ties of immigrant entrepreneurs become international ties of new ventures. This will require a longitudinal examination of evolution of tie formation for new ventures.

CHAPTER 4
ETHNIC NEW VENTURE SURVIVAL

Introduction

Ethnic entrepreneurship has been recognized as an important engine not only for economic growth and the regeneration of economies in both home and host country (Assudani, 2009), but also for creation of job opportunities and economic profits for ethnic entrepreneurs (Masurel, et al., 2004; Teixeira, 2001; Wong & Ng, 2002; Zhou, 2004). It is a field increasingly drawing attention to both academicians and executives. Waldinger, et al. (1990) conceptualized ethnic entrepreneurship as "a set of connections and regular patterns of interaction among people sharing a common national background or migration experiences". This definition focused on ethnic component but failed to consider entrepreneurship. Ethnic entrepreneurship is viewed as business ownership among immigrants, ethnic-group members, or both (Valdez, 2008). This definition indicates that immigrant entrepreneurship is a subsection of ethnic entrepreneurship. Thus, ethnic enterprises include those started by the new arrivals and children of immigrants. Following previous literature (Chand & Ghorbani, 2011), we use immigrant entrepreneurship and ethnic entrepreneurship interchangeably in this study (Saxenian, 2002).

As many countries, including USA, Netherlands and Canada, have been attracting immigrants from other countries for a long period of time, the research on the impact of ethnic immigrants has been traced several decades ago by sociology, entrepreneurship, labor and management scholars (Ilhan-Nas, et al., 2011). There are two streams of

research in ethnic entrepreneurship: cross-national comparison studies and studies of ethnic communities. By adopting cultural approach, the former examines the relationship between various aspects of culture and entrepreneurial behavior (Beugelsdijk, 2007; Lee & Peterson, 2001; Masurel, et al., 2004), and shows the similarity and differences in the values, attitudes, goals in entrepreneurial activities. For example, traditional sociological approach to ethnic entrepreneurship emphasizes the specific characteristics of a given ethnic group. In contrast, entrepreneurship among ethnic communities addresses the motivations, the type of business ethnic entrepreneurs entered and consequences of entrepreneurial activities (Min & Bozorgmehr, 2000); the important pull and push factors include self-employment, social networks, policy, gender, human capital characteristics, demographic factors, and history (Ilhan-Nas, et al., 2011). Besides cultural approach, social network theory is another major framework to explain the trigger of ethnic entrepreneurship. It suggests that "entrepreneurship is embedded in a social context, channeled and facilitated or constrained and inhibited by people's positions in social networks" (Brüderl & Preisendörfer, 1998).

The earlier ethnic entrepreneurship studies focused on how immigrants serve their ethnic community enclaves by providing culturally related products or services in low earning sectors (such as retail and service sectors) because of isolation from mainstream society. Self-employment motivated ethnic entrepreneurship because of unemployment (Basu, 1998; Fairchild, 2010; Light, et al., 1993), social exclusion and social mobility (Kloosterman, 2003). At the same time, small and medium ethnic enterprises rely on co-ethics for funding, advice and employees; the networks of kinship, friendship and

community ties are very crucial for ethnic enterprises. Although the entrepreneurial activities provide subsistence earnings to ethnic entrepreneurs who are excluded from job market and have limited capital, education, and language deficiency, the niche opportunities pursued by ethnic entrepreneurs are neglected by mainstream societies of migration countries. Therefore, these ethnic enterprises were marginal contributors to large economy of host country (Butler & Greene, 2000; Nee, 1973; Portes & Bach, 1985; Wilson & Portes, 1980).

In contrast, recent research shows that immigrants start business and achieve success in high-technology industries, such as computer, information technology and Internet industries. Saxenian (2002) argued that 53% of the science and engineering workforce in Silicon Valley is foreign-born, and immigrants run every three out of ten new ventures in Silicon Valley in the late 1990s. Immigrant started ventures have become a national pattern in the past decade in high-tech industries; foreign-born Americans own 25% of technology and engineering startups between 1995 and 2005 (Wadhwa, et al., 2007). Moreover, new ventures with ethnic-immigrant presence in the founding team tended to pursue a more aggressive prospector strategy in internet industry compared to ventures with non-ethnic-non-immigrant founder team (Chaganti, et al., 2008). Transnationalism approach in international migration literature suggested that ethnic entrepreneurs could strategically use their contacts and associates in another country, primarily their country of origin for business (Portes, et al., 2002; Portes, et al., 1999).

These recent immigrant entrepreneurs are unlike those ethnic entrepreneurs in earlier years in two ways. Firstly, recently immigrant entrepreneurs, many of which are

scientists or engineers, are not constrained to opportunities in ethnic enclaves like the previous counterparts, join in the mainstream network in host country and serve a wider economy, making significant contributions in professional and technical sectors. Secondly, recent immigrant entrepreneurs become transnational entrepreneurs after immediate immigration to host country or undertaking higher education in host country (Portes, et al., 2002; Portes, et al., 1999; Rusinovic, 2008). Transnational entrepreneurs are "self-employed immigrants whose firm's success depends on their contacts and associates in another country, primarily their country of origin" (Portes, et al., 1999). They can combine resources between home and host countries and sell outputs beyond host country in the early years of new venture creation. These individuals own extensive professional and technical education and work experience in home country and/or host country (Fernandez & Kim, 1998), and build international social networks through which critical resources, such as technology and capital, can be leveraged.

The review of ethnic literature suggests that exiting studies examined the factors affecting the formation of ethnic enterprises, the comparison of different ethnic groups in entrepreneurial activities, and the importance of ethnic business to ethnic enclaves, regional or national economy. Using economic, cultural, and social network models, existing studies focused on individual, societal or country analysis of ethnic enterprises. However, few research efforts paid attention to organization-level ethnic entrepreneurship (Ilhan-Nas, et al., 2011), such as strategy and performance of ethnic new ventures. This issue is pertinent for entrepreneurship research because of the increasing number of ethnic-immigrant new ventures in the high-tech sectors. Given

those new ventures' contribution to innovation, job and economic growth in US as well to new immigrants' home country, it is worth investigating their survival, especially what entrepreneurial characteristics and new venture strategies are important?

Entrepreneurship literature suggests that the antecedents and outcomes of entrepreneurship depend on the entrepreneur, firm factors, and environmental contexts (Sandberg & Hofer, 1988; Smith, et al., 2001; Song, et al., 2008). By applying this framework, we particularly address the combined impact of ethnic entrepreneur's immigration status (naturalization) and early internationalization strategy on ethnic new venture survival. The institutional theory implied that new venture survival is enhanced by activities to make new ventures appear reliable and accountable, thereby increasing the legitimacy of organizing efforts (Delmar & Shane, 2004). We argue that both ethnic entrepreneur' naturalization and early internationalization help ethnic new venture to build legitimacy. Ethnic new ventures have advantages in exploiting cross border opportunities by using the founders' human and social capital, reducing liability of ethnicity in host country. Liability of ethnicity exists when new ventures have difficulties in accessing to or acquiring human, social and financial capital because founders are immigrants or belong to ethnic group. Therefore, ethnic new venture's strategy is shaped by the entrepreneur's reaction to the institutional environment and the nature of resource availability (Wilson & Martin, 1982). A good example of ethnic new venture and early internationalization strategy is Yahoo. Established by Jerry Yang in 1995, Yahoo pursued early internationalization strategy into Japan through a joint venture with SoftBank in 1996. It entered into China in 1998 through wholly owned subsidiary (later formed

strategic partnership with a Chinese firm). The Chinese firm, with 7.1 billion USD, bought back 20% stake owned by Yahoo in 2012. Facing fierce competition in US market, Yahoo increased its performance and survival through early internationalization efforts.

Based on Kauffman Firm Survey data, we test the survival of ethnic new ventures through large sample of US firms. As US is attracting more immigrants in high-tech sectors, and those immigrants make significant contributions to economic growth, our empirical settings are appropriate. We found that ethnic new ventures have a lower likelihood of survival compared with non-ethnic new ventures. Furthermore, early internationalization strategy increases ethnic new venture survival. Finally, immigration status (naturalization) moderates the effect of early internationalization strategy on ethnic new venture survival.

We advance the understanding of ethnic new venture survival in two ways. Firstly, ethnic entrepreneurs leverage existing human and social capital, adapt to resources available in both home and host country, and recognize cross border opportunities. Opportunities available to ethnic entrepreneurs lie not only in ethnic enclave and a wider economy in host country but also in the boundary between home and host country. As a transnational entrepreneur, ethnic entrepreneur facilitates the circulation and exchange of information and the combination of resources and opportunities. Secondly, owner's naturalization helps ethnic new venture achieve legitimacy and then establish social ties in host country. These two factors increase ethnic new venture survival by achieving legitimacy and overcoming liability of ethnicity in host country.

Theory and hypothesis development

Survival, rather than profitability, is an important question in new venture research. Uncertainty in the start-up stage pushes new ventures to increase market positions for growth and survival. Thus profitability may be not a good indicator of new venture performance (Baum et al., 2001). It has been argued that firms with good economic performance survive while poorly performing ones discontinue (Alchian, 1950; Friedman, 1953; Winter, 1964). Based on this argument, the same sets of predictors determine firm survival and economic performance simultaneously. However, empirical evidence presents mixed results, suggesting that performance and survival are different phenomenon for new ventures. Therefore, the determinants of new venture performance and survival do not converge (Bosma, et al., 2004; Shane & Stuart, 2002). To solve the conflicting empirical findings about the determinants of performance and survival, Gimeno et al., (1997) proposed that organization survival depends on performance relative to a firm-specific threshold and that a firm's survival or failure is influenced by whether its economic performance is above or below that threshold.

Literature suggests that the probability of failure is highest in a firm's early years, but that it reduces as the firm is maturing (Zimmerman & Zeitz, 2002). Two sets of liabilities (newness and smallness) undermine the viability and challenge survival of new ventures because it is difficult for new ventures to access to resources and achieve legitimacy. It is acknowledged that new venture performance and survival is contingent upon the entrepreneur, strategy, resources and environment (Chrisman, et al., 1998; Sandberg & Hofer, 1988; Smith, et al., 2001; Song, et al., 2008).

Previous literature has studied firm survival intensely. There are quite different definitions for firm survival. Firm closure does not mean that the firm fails as many firms are viewed as successful at the time of closure (Bates, 2005; Watson & Everett, 1996). For instance, some new ventures exit through merger & acquisition or entrepreneurs voluntarily choose exit to return to employment though the new ventures achieve expected performance. In this study, we exclude those new ventures which exit due to merger and acquisition, and only focus on survival firms or those permanently closed firms. Existing studies attribute firm closure or survival to owner, firm, and industry characteristics. We argue that ethnic new venture survival should be determined by both the individual and organizational factors. Thus, organizational mortality is viewed as individual (in the case of small ventures run by entrepreneurs) or organizational choice (Gimeno, et al., 1997).

Particularly, we emphasize ethnic entrepreneur's immigrant status and new venture's early internationalization strategy. Entrepreneurship literature examines owner characteristics and attributes, and finds that certain qualities and capabilities, such as human, social and financial capital, increase the likelihood of firm survival (Bates & Servon, 2000; Bruderl & Schussler, 1990; Taylor, 1999; Van Praag, 2003; Wicker & King, 1989). Entrepreneurs could acquire resources and apply their skills or competences in managing new ventures, which could generate a competitive advantage and lead to new venture success (Gimeno, et al., 1997). Ethnic entrepreneurship demonstrates as well that human capital and demographic factors such as gender, education, experience, immigrant status, and language distance were associated with ethnic entrepreneurship

(Constant & Zimmermann, 2006; Evans, 1989; Mora & Dávila, 2005; Ram, et al., 2003; Valdez, 2008; Waldinger, et al., 1990). Ethnic entrepreneurs have established social and business network in home countries, which might not be useful in the countries they immigrated unless uniquely combined with resources and opportunities in host country (De Carolis, Litzky, Eddleston, 2009). Many ethnic entrepreneurs become citizens of host country through naturalization. On one hand, naturalization helps ethnic entrepreneurs and their new ventures to achieve legitimacy, obtaining acceptance by suppliers and customers not only in ethnic enclave but also in a wider economy. On the other hand, due to naturalization, ethnic entrepreneurs better understand market and emerging technology in host countries. Therefore, naturalization enables ethnic entrepreneurs to better combine opportunities and resources between home and host countries, increasing ethnic new venture' survival. Another salient factor for new venture success is internationalization (Bloodgood, et al., 1996), which is pertinent to ethnic new ventures as ethnic entrepreneurs' experience and social capital can reduce uncertainty in internationalization process. Therefore, unlike non-ethnic new ventures, ethnic new ventures are less likely to be associated with liability of foreignness in internationalization process. Early internationalization into home countries or other culturally similar countries presents ethnic new ventures growth opportunities, increasing their survival in host country.

Ethnic new venture survival

Immigrants have higher rates of business creation and ownership largely due to their exclusion to job market. Ethnic entrepreneurship literature argued that ethnic

enterprises initially provide products or services targeted co-ethnics in ethnic community (Light, 1972). Those opportunities are ignored by native-owned competitors because they don't understand tastes and preference of ethnics. The limited growth opportunities, such as small size of ethnic community and limiting purchase power of immigrants, lead to the higher mortality rates of ethnic enterprises because ethnic market allows only a small fraction of ethnic enterprise to survive (Aldrich & Waldinger, 1990). Furthermore, some government policies in immigration and labor market indirectly influence the survival of ethnic enterprises (Collins, 2003). By pursuing wider opportunities in non-ethnic markets, ethnic enterprises diversify to other industries-backward or forward into related industries (Mohl, 1985; Portes, 1987). However, inter-ethnic competition may exclude ethnic enterprises' entry into some sectors, which are controlled by non-ethnic group entrepreneurs. There are four different markets in which ethnic enterprise can grow: "underserved or abandoned markets, markets characterized by low economies of scale, markets with unstable or uncertain demand, and markets for exotic goods (Aldrich & Waldinger, 1990). Those markets face uncertainty and increase ethnic entrepreneur's risk so that ethnic new ventures are more likely to fail.

We already saw the huge success of some ethnic ventures in high-technology sectors. Those immigrant entrepreneurs could combine technological capabilities in Silicon Valley with institutions and resources in home country or other cultural similar countries (Saxenian, 2002). Meanwhile, immigrant started ventures benefited from entrepreneurial system in US, such as venture capital and professional network. However, most of ethnic entrepreneurs pursue technological niche for venture creation by avoiding

competing head to head with firms having leading-edge skills and technology. These innovative high-tech ethnic new ventures involve higher risk as well due to volatile environment change. Meanwhile, even in Silicon Valley, some immigrants with graduate degrees in engineering from US universities or worked in technology firms are still outsiders to the region's mainstream technology community. Due to such social exclusion, they joined in professional organizations where social network is available among co-ethnics (Saxenian & Hsu, 2001). The difficulties in accessing to social capital in host country may decrease the survival of ethnic new ventures. As our investigation focuses on ethnic new ventures in the early stage of formation in the varying industries rather than only technological sectors, we expect that these ethnic new ventures in different industries not only have liability of newness and smallness; more importantly it is difficult to obtain financial and human capital required for ethnic new venture growth and survival because of liability of ethnicity compared with non-ethnic new ventures. All these suggest:

Hypothesis 5*: Compared with non-ethnic enterprises, ethnic new ventures are confronted with a lower likelihood of survival.*

Early internationalization and ethnic new venture survival

New venture could achieve growth through internationalization. INV literature, however, suggests that initial internationalization decreases prospects for firm survival because the costs of establishing new routines for market entry and building positional advantages in foreign markets are significant and enduring (Sapienza, et al., 2006).

Empirically, Mudambi and Zahra (2007) argued that an INV strategy has higher failure than a sequential FDI strategy if endogenizing strategy choice is not considered. Therefore, INV strategy contributes to new ventures' failure as they experienced unique challenges associated with "liability of foreignness". Traditional ethnic enterprises serve co-ethnics within the ethnic community because ethnic entrepreneurs are familiar with the immigrants' homeland and knowledge of tastes and buying preferences (Aldrich, et al., 1985). However, serving only the protected market in host country limits those ventures' growth opportunity and survival; instead, ethnic new ventures can pursue INV strategy to exploit opportunity structure in home or culturally similar country to increase the survival likelihood. Ethnic entrepreneurs have advantages in providing product or service to home country because of linguistic and cultural capabilities as the institutional knowledge (Gillespie, et al., 1999). Moreover, through early internationalization strategy, ethnic new ventures could compensate for liability of ethnicity in host country. Therefore, early internationalization strategy is shaped by the ethnic entrepreneur's reaction to the institutional environment and the nature of the resources available.

In earlier years, due to lack of opportunities or instability in emerging home countries, immigrants voluntarily seek opportunities (including employment with high wage, self-employment and business ownership) in host countries (typically developed economies) so that internationalization to home country is not economically feasible. But with the increasing income of consumers in home country and the ease of managing international business, ethnic new ventures pursue INV strategy for growth opportunities, which could increase their survival. Wong and Ng (2002) examined the small

transnational enterprises founded by recent Chinese entrepreneur immigrants to Vancouver, Canada and suggested three types of transnational business type: (1) Asian production-North American distribution, (2) retail chains and (3) import-export. In contrast to earlier Chinese immigrants, the recent Chinese immigrants combined cross border activities by strategically using their contacts and associates in their country of origin.

Hypothesis 6: *INV strategy will increase the likelihood of ethnic new ventures' survival.*

Immigration status and their new venture survival

The organizational contributions of the owner to new venture are not limited to capital but also in the form of the entrepreneur's life experience or education, allowing new venture's access to dense resources and information networks. Due to such contribution, the entrepreneur is likely to exert control over new venture strategy choice. Immigrant entrepreneurs have established dense social and business network in home country (Westhead, et al., 2001), which may not necessarily be useful if ethnic entrepreneurs and their started ventures cannot achieve legitimacy in host country. Undertaking legitimacy is a necessary precondition to initiate social ties with stakeholders and obtain and recombine resources (Delmar & Shane, 2004). Immigrants have language problem or lack proper credentials, and are socially excluded to mainstream societies so that their started ventures are highly doubted. Founders' naturalization can help ethnic enterprises to achieve legitimacy and get accepted by stakeholders so that those enterprises could access to additional resources in host country for early internationalization. In other words, naturalization influences the ability of

ethnic entrepreneurs to network with, market to natives, to be integrated into the wider economy. Therefore, naturalization permits to better circulate information and combine cross border opportunities, especially for entrepreneurs holding dual citizenship. Naturalization alone might not be useful; instead we expect the combined effect of early internationalization strategy and naturalization.

Hypothesis 7*: Ethnic entrepreneurs' naturalization will increase the effect of INV strategy on the likelihood of ethnic new ventures' survival*

Methodology

Data and Sample

The Kauffman Firm Survey (KFS) database provides annual tracking information of a panel of 4,928 new businesses started in 2004 (baseline survey) with 6 follow-up surveys in 2005, 2006, 2007, 2008, 2009 and 2010. For each new venture, the longitudinal database provides information about business characteristics, strategy and innovation, business organization and HR benefits, business finances, work behavior, ownership and demographics of up to ten owners. Although some establishments can be legally tied another establishment through subsidiary relationships, all of the establishments covered in the KFS database are independent non-subsidiary economic and legal entities.

Variables

The KFS database provides us with the year in which the firm went out of business and the reason it is no longer in business (time-to-event data). The study

exclusively examines businesses founded in 2004 and their survivability by the end of 2010. Thus, the data provide a unique opportunity to study new venture survival because the cohort firms are six years old in 2010; firms under six years old are defined as new ventures according to US Small Business Administration. Exit or closure of a business is determined by the specific questions in the annual follow-up surveys asking whether a business is closed and the reason(s) for its closure. Four closure reasons are identified in the surveys and they are: 1) sold to another business, 2) merged with another business, 3) temporarily stopped operations, and 4) permanently stopped operations. Our study is interested in permanently stopped operations, which are viewed as firm closure.

For major independent variables, ethnic new venture (ENV) refers to a business whose primary owner is foreign-born. International new venture (INV) is defined as a business achieved at least 5% international sales at least in two years within a three-year time frame between 2007 and 2009. Naturalization is measured when primary owner is foreign born and owns US citizenship. All independent variables are indictors.

Based upon extant literature and data availability in the KFS (The final sample is constructed by requiring that each business has all the variables needed to conduct a duration analysis as of the startup year.), the following control variables regarding owner attributes and firm characteristics are selected. Specifically, we examine primary owner's individual attributes (demographic characteristics and human capital), and firm characteristics and strategy. We included an entire list of definition of variables and descriptions in Table 4.1. It is hypothesized that disadvantaged demographic characteristics are associated with greater likelihood of business exiting, and vice versa.

Table 4.1 Variable Definition and Descriptive Statistics (n=1,672)

Variables	Definition	Mean	S.D.
Firm characteristics			
INV	A business has achieved 5% international sales in two years between 2007-2009	0.05	0.22
ENV	The new venture's primary owner belongs to any ethnic group	0.11	0.31
Service	Whether a business provides service in the first year	0.81	0.39
Corporation	Whether a business is registered as a corporation	0.33	0.47
Intellectual property	Whether a business has patents, trademarks and copyrights in the first year	0.34	0.65
Loss	Whether a business had losses in the first year	0.52	0.5
Revenue	The amount of revenue a business has in the first year	5.93	5.52
Owner characteristics			
Black	Whether the primary owner is Black	0.08	0.28
Asian	Whether the primary owner is Asian	0.04	0.2
Hispanic	Whether the primary owner is Hispanic	0.04	0.19
Other	Whether the primary owner belongs to other ethnic group	0.03	0.16
Female	Whether the primary owner is female	0.21	0.41
Naturalization	The primary owner is foreign born and owns U.S. citizenship		
Multiple owners	The number of owners in a business	0.4	0.49
Ownership	Percentage of the business owned by the primary owner	77.45	28.76
Paid owner	Whether the primary owner is a paid employee	0.45	0.5
Working hours	The number of hours primary owner works per week	42.61	24.84
Working experience	The number of years of primary owner’s previous work experience	13.47	11.4
Age	The primary owner’s age	47.27	11.02
Education	The primary owner has a college degree or above	0.72	0.45
Same business	Whether the primary owner started a new venture previously in the same industry	0.41	0.49

We included different ethnicity, age and gender. It is also expected that greater human capital endowments of business owners will increase the survival probability of their businesses (Bates, 1990; Brüderl, et al., 1992; Schoonhoven, et al., 1990). The human capital endowments are measured by primary owner's highest degree, number of years of primary owner's work experience, whether primary owner is a paid employee, and whether primary owner started another new venture in the same industry as current new venture competes. Finally, multiple owners dummy and percentage of ownership by primary owner are also included.

Among the firm characteristics are firm size (Revenue in 2004), innovative activities and capacity (whether a firm has intellectual property in terms of patents trademarks, and copyrights), service (whether a firm provides a service in the first year), legal status (whether the business is a corporation) and loss (whether a firm experiences financial loss in 2004). Greater initial establishment size at time of founding is expected to increase survival chances because large firms have more resources and better management (Aldrich & Auster, 1986; Hannan & Freeman, 1993). By the same token, generating revenues in early operations will increase a firm's survival chances by reducing liability of smallness while experiencing losses will reduce its survival chances. It is hypothesized that more business innovative activities and capacity will enhance new ventures' competitive edge and reduce mortality probability (Delmar & Shane, 2006). Legal status will help new venture to achieve legitimacy and thus increase new venture survival (Bruderl & Schussler, 1990).

The study includes all two-digit NAICS sectors ranging from Agriculture, Forestry, Fishing and Hunting (11) to Public Administration (92) to control environment effects. The venture's competitive environment affects economic performance and survival because different industries have varying performance, resource munificence (Gimeno, et al., 1997), reinvestment intensity, sunk costs, and barriers to exit (Porter, 1976).

Models

In this study, two different models are employed. Firstly, we use Probit model to predict new venture survival without considering time. Secondly, we use duration (survival) analysis to test our hypotheses. Survival analysis is a collection of methods for analyzing time-to-event data. Time-to-event data reflect the observation of the time from a specified time origin (startup year) to a particular endpoint defined by the occurrence of a certain *event of interest* (firm closure). The Kauffman Firm Survey data provide us with records of an *event of interest* (firm closure) from a specified time origin (startup year). There are no left-censored new ventures in our analysis because all new ventures are observed from 2004 when they were established. New ventures are treated as right censored if they still survive by the end of six years observation period. Particularly, we use Cox proportional hazards regression to model the hazards of new venture closure.

Cox (1972) introduced a semi-parametric model for survival time which could add covariates but not impose a parametric form for the distribution of survival times. The Cox proportional hazard rate can be written as follows:

$$h(t \mid X_i) = h_0(t)\exp(X_i\beta) \qquad (1)$$

Where h_0 is known as the baseline hazard and depends on *t*, X a vector of covariates and β is a vector of parameters to be estimated. When X is changed, the conditional hazard functions change proportionally with one another. Hazard functions for any pair of different covariate values *i* and *j* can be compared using a hazard ratio:

$$HR = \frac{h(t \mid X_i)}{h(t \mid X_j)} = \frac{h_0(t)\exp(X_i\beta)}{h_0(t)\exp(X_j\beta)} = \frac{\exp(X_i\beta)}{\exp(X_j\beta)} \qquad i \neq j \qquad (2)$$

Empirical results

Table 4.1 also reports the descriptive statistics for owner and business characteristics. All of these characteristics were measured at the business startup (2004) except INV strategy, which was constructed using 2007-2009 international sales data. We drop some observations because the missing value for some variables.

Table 4.2 shows the regression results by estimating the Probit and Cox models for the survival of, and the hazard function of 1,672 and 1,552 new US businesses established in 2004, which include both ethnic new ventures and non-ethnic new ventures. We use Probit regression in Modes 1-3 and Cox regression in Models 4-6. The control variables are included in Models 1 and 4. Then we enter the main effects of two variables ENV and INV in Models 2 and 5. Finally, interactions are included in Models 3 and 6.

Hypothesis 5 states that ethnic new ventures have a lower likelihood of survival compared with non-ethnic enterprises. The results of both Probit and Cox models support this hypothesis. Model 2 demonstrates a lower survival rate for ethnic new ventures with

Table 4.2 The Results of New venture Survival and Closure

Variables	Probit models			Cox models		
	(1)	(2)	(3)	(4)	(5)	(6)
Cons	-2.10***	-2.25***	-2.25***			
	(0.61)	(0.62)	(0.62)			
ENV (H5)		-0.26*			0.30*	
		(0.12)			(0.14)	
INV		1.14***			-1.51***	
		(0.18)			(0.31)	
ENV(0)*INV(1)			1.10***			-1.47***
			(0.20)			(0.34)
ENV(1)*INV(0)			-0.27*			0.30*
			(0.12)			(0.14)
ENV(1)*INV(1) (H6)			1.06*			-1.36+
			(0.42)			(0.72)
Service	0.07	0.11	0.11	-0.12	-0.17	-0.17
	(0.09)	(0.09)	(0.09)	(0.11)	(0.11)	(0.11)
Corporation	-0.09	-0.09	-0.09	0.09	0.09	0.09
	(0.07)	(0.07)	(0.07)	(0.09)	(0.09)	(0.09)
Intellectual property	0.04	0.03	0.03	-0.02	-0.00	-0.00
	(0.05)	(0.05)	(0.05)	(0.07)	(0.07)	(0.07)
Loss	-0.04	-0.04	-0.04	0.03	0.04	0.04
	(0.06)	(0.07)	(0.07)	(0.08)	(0.08)	(0.08)
Revenue	0.01	0.01	0.01	-0.00	-0.00	-0.00
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Black	-0.13	-0.09	-0.09	0.15	0.12	0.12
	(0.12)	(0.12)	(0.12)	(0.14)	(0.14)	(0.14)
Asian	-0.08	0.05	0.04	0.03	-0.12	-0.12
	(0.16)	(0.18)	(0.18)	(0.20)	(0.22)	(0.22)
Hispanic	0.05	0.15	0.16	-0.12	-0.24	-0.24
	(0.17)	(0.17)	(0.17)	(0.22)	(0.23)	(0.23)
Other	-0.32+	-0.29	-0.29	0.37+	0.36+	0.36+
	(0.19)	(0.19)	(0.19)	(0.21)	(0.21)	(0.21)
Female	0.01	0.02	0.02	-0.05	-0.07	-0.07
	(0.08)	(0.08)	(0.08)	(0.10)	(0.10)	(0.10)
Multiple owners	0.19+	0.19+	0.19+	-0.20	-0.20	-0.20
	(0.10)	(0.11)	(0.11)	(0.12)	(0.12)	(0.12)
Ownership	0.01***	0.01***	0.01***	-0.01***	-0.01***	-0.01***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Paid owner	0.14*	0.14*	0.14*	-0.14+	-0.13	-0.13
	(0.07)	(0.07)	(0.07)	(0.08)	(0.08)	(0.08)
Working hours	0.00+	0.00	0.00	-0.00	-0.00	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Working experience	0.01*	0.01*	0.01*	-0.01+	-0.01	-0.01
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Age	0.06***	0.07***	0.07***	-0.06**	-0.06**	-0.06**
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Age Square	-0.00***	-0.00***	-0.00***	0.00**	0.00**	0.00**
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Education	0.03*	0.03+	0.03+	-0.04*	-0.04+	-0.04+
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Same business	-0.06	-0.06	-0.06	0.07	0.06	0.06
	(0.07)	(0.07)	(0.07)	(0.09)	(0.09)	(0.09)
2-digit NAICS code	Included	Included	Included	Included	Included	Included
N	1672	1672	1672	1552	1552	1552
Pseudo R2	0.04	0.06	0.06			
Chi2	83.92*	134.32***	134.55***	65.6***	108.81***	108.87***
Log likelihood	-1113.99	-1088.79	-1088.67	-4721.40	-4699.80	-4699.76

Standard errors in parentheses + p <0.1 * p<0.05 ** p<0.01 ***p<0.001

ENV (b=-0.26, p<0.05). Model 5 confirms that ethnic new ventures have a higher hazard rate (b=0.30, p<0.05) compared with non-ethnic new ventures. The estimated coefficient for the variable of ENV means that ethnic new ventures have 35%, [exp(0.30)=1.35], more probability of permanent business closure.

Hypothesis 6 proposes that there are synergistic moderation effects between ENV and INV on the survival, indicating that INV strategy can increase ethnic new venture survival. As is seen in Models 3 and 6, the interaction between ENV and INV in Model 3 is statistically significant (b=1.06, p<0.05), suggesting an INV strategy could help ethnic new venture survive. Furthermore, the interaction between those two variables in Model 6 is negatively significant (b=-1.36, p<0.1), showing that an INV strategy could reduce ethnic new venture's hazard of permanently closing business by 74%.

Table 4.3 presents the regression results by estimating the Probit and Cox models for the survival and the hazard function of 403 and 372 ethnic new ventures. We use Probit regression in Models 7-9 and Cox regression in Models 10-12. The control variables are included in Models 7 and 10. Then we entered the main effects of two variables: INV and Naturalization in Models 8 and 11. Finally, interactions are included in Models 9 and 12.

In Models 8 and 11, INV is statistically significant (p<0.01 and 0.05 respectively), which also confirms Hypothesis 6 that an INV strategy could increase ethnic new venture survival. The hypothesis 7 suggests that in ethnic new ventures, naturalization can moderate INV strategy on the firm's survival. In Models 9 and 12, the interaction effect between INV and naturalization supports this hypothesis. The coefficients are 0.93

Table 4.3 The Results of Ethnic New Venture Survival and Closure

Variables	Probit models			Cox models		
	(7)	(8)	(9)	(10)	(11)	(12)
Cons	-2.42*	-2.24+	-2.26+			
	(1.19)	(1.20)	(1.20)			
INV (H5)		1.14**			-1.42*	
		(0.35)			(0.60)	
Naturalization		-0.17			0.13	
		(0.15)			(0.18)	
INV(0)*Naturalization(1)			-0.16			0.13
			(0.15)			(0.18)
INV(1)*Naturalization(0)			1.25*			-1.57
			(0.61)			(1.02)
INV(1)*Naturalization(1) (H7)			0.93*			-1.21+
			(0.44)			(0.74)
Service	0.40+	0.43+	0.43+	-0.54*	-0.57*	-0.57*
	(0.22)	(0.23)	(0.23)	(0.27)	(0.27)	(0.27)
Corporation	0.05	0.05	0.04	-0.01	-0.02	-0.02
	(0.15)	(0.15)	(0.15)	(0.18)	(0.18)	(0.18)
Intellectual property	-0.17	-0.17	-0.17	0.28*	0.27*	0.27*
	(0.11)	(0.11)	(0.11)	(0.13)	(0.13)	(0.13)
Loss	0.24+	0.26+	0.26+	-0.34+	-0.33+	-0.33+
	(0.14)	(0.15)	(0.15)	(0.18)	(0.18)	(0.18)
Revenue	0.01	0.01	0.01	-0.01	-0.01	-0.01
	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)
Black	-0.42	-0.34	-0.34	0.40	0.35	0.35
	(0.26)	(0.26)	(0.26)	(0.26)	(0.26)	(0.26)
Asian	0.33*	0.35*	0.35*	-0.47*	-0.48*	-0.48*
	(0.17)	(0.17)	(0.17)	(0.22)	(0.22)	(0.22)
Hispanic	0.17	0.20	0.20	-0.21	-0.25	-0.25
	(0.21)	(0.21)	(0.21)	(0.25)	(0.25)	(0.25)
Other	-1.49**	-1.47*	-1.46*	1.43***	1.36***	1.36***
	(0.56)	(0.57)	(0.57)	(0.37)	(0.37)	(0.37)
Female	-0.24	-0.20	-0.20	0.12	0.09	0.09
	(0.18)	(0.18)	(0.18)	(0.22)	(0.22)	(0.22)
Multiple owners	0.49*	0.44+	0.45+	-0.65*	-0.59*	-0.59*
	(0.24)	(0.24)	(0.24)	(0.29)	(0.29)	(0.29)
Ownership	0.01	0.01	0.01	-0.01+	-0.01+	-0.01+
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Paid owner	0.16	0.21	0.21	-0.19	-0.21	-0.21
	(0.14)	(0.14)	(0.14)	(0.17)	(0.17)	(0.17)
Working hours	0.00	-0.00	-0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Working experience	0.00	0.00	0.00	-0.00	-0.00	-0.00
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Age	0.02	0.01	0.01	0.00	0.01	0.01
	(0.05)	(0.05)	(0.05)	(0.06)	(0.06)	(0.06)
Age Square	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Education	0.07+	0.06	0.06	-0.14**	-0.13**	-0.13**
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Same business	-0.31+	-0.33+	-0.33+	0.40*	0.40*	0.40*
	(0.17)	(0.18)	(0.18)	(0.20)	(0.20)	(0.20)
2-digit NAICS code	Included	Included	Included	Included	Included	Included
N	403	403	403	372	372	372
Pseudo R2	0.11	0.14	0.14			
Chi2	61.64***	75.94***	75.99***	66.41***	76.11***	76.14***
Log likelihood	-248.52	-241.37	-241.34	-925.77	-920.92	-920.90
Standard errors in parentheses	+ p <0.1 * p<0.05 ** p<0.01 ***p<0.001					

($p<0.05$) and -1.21 ($p<0.1$) respectively. Model 12 shows that the interaction could reduce the probability of ethnic new venture closure by 70%.

Conclusion and discussion

Our study investigated ethnic new venture survival. Specifically, we compare survival rates of ethnic vs. non-ethnic new ventures. We found that ethnic new ventures have a lower likelihood of survival because it is a challenge for them to access to human and financial capital in host countries. To overcome this disadvantage, ethnic new ventures could choose early internationalization strategy because ethnic entrepreneurs' experience and social capital could partially substitute the lack of such experience by their new ventures in internationalization. Finally, ethnic entrepreneurs' naturalization moderates the effects of early internationalization strategy on ethnic new venture survival by helping ethnic entrepreneurs achieve legitimacy and combine cross border resources and opportunities.

Theoretical contributions

Existing ethnic entrepreneurship aims to unpack the determinants of ethnic enterprises or compare the ethnic enterprises started by different ethnic minority groups. Largely, those ethnic enterprises concentrated in sectors neglected by majority of entrepreneurs and served customers in ethnic enclave, marginally contributing to the overall economy of host country. Recent ethnic entrepreneurship documented the huge success of ethnic entrepreneurs (Asian immigrants) in science and engineering industries

by pursuing technological opportunities in US. Ethnic entrepreneurship literature shows rather different views of ethnic enterprises' contribution to economic growth in host country. Our study focuses on newly established ethnic ventures, which not only face liability of newness, smallness but ethnicity. International entrepreneurship examines INVs or focuses cross-country comparison of entrepreneurial systems, and fails to address entrepreneurial activities by immigrants. We study ethnic new venture survival, an under-researched topic in international entrepreneurship field. By using large sample of new ventures in US, we found that ethnic new ventures still are more likely to fail than non-ethnic new ventures though they are successful in some industries. The lower survival rates are associated with liability of ethnicity.

In the past, only large multinational firms enjoyed growth opportunity in international markets because they have abundance of resources to expand. While even small firms could use resources and serve customers in foreign countries nowadays thanks to the falling cost of transportation and communication. Compared with non-ethnic ventures, ethnic new ventures are in a better position to undertake international strategy since immigrant entrepreneurs established network and social capital in home or culturally similar countries. Besides, those team-based new ventures are more flexible in managing the complex cross border activities. Earlier ethnic entrepreneurship failed to show the importance of early internationalization strategy owing to several reasons. Firstly, in the past, immigration happened from developing to developed countries due to a range of factors concerning the instability of home country and opportunities in host country. A shortage of opportunities in home country made immigrants to search

opportunities in developed host country. Thus, internationalization to home countries became impossible due to limited opportunities there. Secondly, the abundance of resources, liberalization of economy, and the subsequent catch-up of income level in home country make internationalization to home country more attractive recently. In host country, ethnic new ventures are vulnerable in competing with non-ethnic new ventures for resources and market so that they have higher rates of failure. Nonetheless, ethnic new ventures could choose early internationalization strategy to eliminate higher failure by strategically use founders' contacts and resources in country of origin. Market expansion strategy that ethnic new ventures could choose evolved from ethnic enclave, a wider market, and market of home or culturally similar countries through internationalization. Previous INV literature suggested that early internationalization decreases new venture survival because of liability of foreignness; however, we found that early internationalization benefits ethnic new venture survival by accessing to resources and pursuing market growth. This finding contributes to both international and ethnic entrepreneurship.

Our study suggests as well that immigration status of founder is fundamental in the venture's pursuing internationalization strategy. Immigrants' past experience and social capital in home country may not apply to new environment of host country, leading to choice of self-employment because of exclusion to job market (Sanders & Nee, 1996). Many immigrants choose re-education in host country to start new ventures later. Those foreign-born but US educated entrepreneurs are quite successful in technology and engineering areas (Saxenian, 2002). Ethnic entrepreneur naturalization helps the new

venture achieve legitimacy so that new venture can be accepted by host country stakeholders. Moreover, immigrant entrepreneurs could better understand host country's technology and market after naturalization, thus effectively combining resources and opportunities between home and host countries. Ethnic entrepreneurs holding dual citizenship could explore and exploit cross border opportunities more effectively. To sum up, naturalization could increase the effect of internationalization on ethnic new venture survival. Extant literature suggests that immigrant status per se is not important for firm performance. Our study indicated that immigrant status is fundamental to ethnic new venture survival by moderating early internationalization strategy.

Managerial implications

Our study has several implications for managers or business owners. Our findings suggest that ethnic new ventures overall have lower survival rates compared with non-ethnic new ventures in host country. This is likely the case because liability of ethnicity prevents ethnic new ventures from accessing to human and financial capitals and opening market to majority customers. We recommend immigrant entrepreneurs to pursue growth objective in areas they do not compete head-to-head with non-ethnic ventures for market and resources; for instance, foreign-born but US educated entrepreneurs are successful in high-tech and engineering fields. In other words, ethnic new venture should adopt a niche strategy in product offering or enter into sectors where non-ethnic new ventures do not have competitive advantage. To some extent, such growth could increase ethnic new ventures' survival.

In addition, our results have shown that early internationalization strategy increases ethnic new ventures' survival. As a result, ethnic entrepreneurs need to recognize their unique strengths, which might be difficult for non-ethnic entrepreneurs to own or duplicate. Particularly, immigrants' experience, network, and social capital will have impacts on choosing early internationalization strategy. Meanwhile, they can leverage unique resources and identify customer demand in home country. Immigrant entrepreneurs should employ a niche-focused, proactive international strategy after immediate inception of their new ventures. As entrepreneurs are good at employing different resources, the combination of international resources is an advantage for ethnic entrepreneurs. By providing growth opportunity, early internationalization strategy is so critical for ethnic new venture survival in host country.

Further, ethnic new ventures can achieve legitimacy after the primary owner's naturalization. It means that those ventures are accepted by customers, suppliers and other stakeholders, thus boosting the survival of ethnic new ventures. While, through naturalization immigrants can assimilate into host country's culture, understand non-ethnic customer preference in host country, and be familiar with competition in particular industry. Therefore, ethnic entrepreneurs could be better than those non-naturalized ethnic counterparts in combining international opportunities between home and host countries. Naturalization itself may not have effect on ethnic new venture survival but moderate early internationalization strategy on ethnic new venture survival.

Limitations and future research

Broadly, we find that early internationalization strategy is fundamental for ethnic new venture survival. As we defined early internationalization strategy by using international sales, it's difficult to distinguish between the roles of export and wholly owned subsidiary due to our data limitation. It assumes that new ventures in this study use export as entry mode because those small entrepreneurial ventures have limited resources engaged in wholly owned subsidiary. Scholars can examine how social network of immigrant entrepreneurs affects international decisions and entry mode choices to home country. Meanwhile, this study focuses on the survival of ethnic new ventures from the view of host country. Future research could investigate the role of ethnic ventures from the view of home country, such as returnees venture survival and knowledge spillover of diaspora investment and entrepreneurship.

As we examine the overall pattern of ethnic new venture survival, we cannot explain the success of particular ethnic group in entrepreneurial activities, such as Indian and Chinese immigrants' success in Silicon Valley. The form of transnationalism or transnational entrepreneurship can be expected to vary significantly according to the nationality of the immigrant (Ilhan-Nas, et al., 2011). Previous studies revealed that the national culture of home country has impact on the formation and use of social networks among immigrant entrepreneurs (Chand and Ghorbani 2011). Another direction future studies may want to pursue is comparing between different ethnic groups. More specifically, the differences between ethnic groups in choosing early internationalization strategy are worth further investigation. The comparison could employ cultural

framework to account for the impact of internationalization on ethnic new venture survival between different ethnic groups.

Ethnic entrepreneurship widely examined new immigrants and their new ventures. The succeeding generations are more likely to become integrated into the wider economy in host country and lost advantages in combining resources from parents' country of origin. Are parents' resources important to international decision of second-generation immigrants? However, few studies explore internationalization strategy of ventures started by second-generation immigrants, which is an interesting research topic. More specifically, future studies could explore the role of parents' social capital on early internationalization strategy of ventures formed by second-generation immigrants.

CHAPTER 5
CONCLUSION AND FUTURE RESEARCH

This dissertation mainly examines the determinants and performance of INVs. Different from previous studies, we particularly focus on the role of immigrant entrepreneurs who can facilitate the flow of human, social and financial capital and combine cross border opportunities. The understanding of international entrepreneurship could be further advanced under lens of diaspora and ethnic entrepreneurship. By focusing on founding team level analysis, the second study found that more immigrant entrepreneurs in a new venture's founding team are more likely to pursue INV strategy while more US citizen entrepreneurs in a founding team will pursue DNV strategy. An ethnical founding team could possess complementary resources and network to facilitate INV strategy. Furthermore, an INV has higher revenues than a DNV but there is no difference in profits between them. The findings suggest that early internationalization is critical to immigrant-started new ventures through revenue growth.

New ventures are more likely to fail in early years of formation as they face liability of newness and smallness. In the third study, we found that ethnic new ventures overall have a lower likelihood of survival compared with non-ethnic new ventures. But, ethnic new ventures could increase survival through INV strategy and ethnic entrepreneur's immigration status. After ethnic entrepreneur's naturalization, ethnic new ventures could achieve legitimacy, helping seek further social capital in host country. Meanwhile, INV strategy could compensate for ethnic new venture's liability of ethnicity.

Overall, a new venture with ethnic entrepreneurs on the founding team could access to human and social capital of each founder to make strategic choice. Such new venture has advantages in pursing early internationalization strategy because of founders' ethnic advantages. Therefore, early internationalization strategy is shaped by the ethnic entrepreneur's reaction to the institutional environment and the nature of resources available in host country. Early internationalization could increase ethnic new venture's revenue by opening geographic market. Additionally, earl internationalization strategy could increase ethnic new venture survival by overcoming liability of ethnicity in host country.

There are two streams of research worth investigating in future. On one hand, emigrants facilitate economic catch-up of home country through diaspora investment and entrepreneurship, for instance China becomes world factory with the help of Chinese diaspora. Future studies can examine internationalization strategy of emigrants started ventures, such as which entry model will be used by emigrants when investing in home country or culturally similar countries. In addition, the importance of diaspora investment and entrepreneurship and how they influence government policy in home country should be studied. On the other hand, immigrants, especially high-skilled ones, are playing influential roles in economic growth and innovation of host country as well. Future studies can compare the differences between ventures started by recent immigrants and by earlier immigrants in host country. Moreover, research on how ethnic new venture internationalization contributes to host country is needed, such as exporting activities of ethnic new ventures.

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