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Success Factors for New Business Start-up in Hong Kong:
A Study of the External Networks of
Small Business Start-up

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Declaration

This thesis contains no material that has been accepted for the award of any other degree or diploma in any university.

To the best of my knowledge and belief this thesis contains no material previously published by any other persons except where due acknowledgement has been made.

Signature: _____

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Date: June 2009

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Abstract

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Most small new firms face problems in surviving the gestation process and achieving a viable performance thereafter because of the very fact of their smallness and newness. Due to a lack of internal resources, entrepreneurs of small new firms find it necessary to seek resources from outside the firm through their external social network. The theory of social capital that prescribes valuable resources are embedded in social relations is, thus, particularly relevant to the small business start-up situation. The embedded resources within an external network are hypothesized to have a positive impact on the business performance of these new firms. The main objective of the present study is to empirically investigate the impact of external networks, and in particular the initial social network of entrepreneurs, to the success of small firm start-up in Hong Kong. The second objective is to determine whether there is any interaction effect of the entrepreneur's networking capability with the external network structure on the start-up success of small Hong Kong firms.

To carry out the research, this study offers a conceptual model linking initial network start-up success to initial network structure of start-up, and including an interaction effect from the entrepreneur's networking capability. The study operationalizes social capital in four types of network constructs: network size, trustworthiness, network support and network diversity. A series of hypotheses relating to these four dimensions asserting external network determinants of the start-up success of small firms is posited. Other hypotheses which assert the interaction effect between an entrepreneur's networking capability and the initial network

structure on the success of small firm start-up, are also posited. A field survey, administered to 1,000 small Hong Kong firms of various industries, is used to gather the data. The questionnaire survey was developed in two languages – Chinese and English – to ensure a good level of understanding in the bilingual business environment of Hong Kong. Of the 1,000 questionnaires dispatched, a final sample of 89 small firms was used to empirically test the hypotheses using multiple regression analysis and multiple hierarchical regression analysis. Control variables such as entrepreneurs' experiences and education prior to the firm start-up are included.

Empirical results indicate that the verification of social capital theory's prescription for start-up success cannot be supported unequivocally. The results suggest that some initial network conditions such as initial size of strong tie network, network support and network diversity are positively associated with some measures of start-up success, but trustworthiness of network ties and the size of weak tie network do not figure among them. No evidence is found to support that entrepreneurs' networking capability can positively enhance the effect of the initial network structure on start-up success. Overall, the study raises some questions on the positive linear relationship of certain operationalized constructs such as network size and trustworthiness of social capital with start-up success. Following the findings of this research, future studies may choose to further investigate social capital theory on small start-up success by refining the operationalization of social capital, and verify other interaction effects of entrepreneurs' networking capabilities.

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Chapter 1   Introduction

1.1 Background

It is widely accepted that new firms play a key role in the economy, but most new firms face the problem of surviving the gestation process and achieving a viable performance thereafter. Marketing objectives (Lee & Osteryoung, 2001), strategies (Terpstra & Olson, 1993), pre–start-up planning (Reid & Smith, 2000), product and services provision (Riquelme & Watson, 2002) are all identified by researchers as having an impact on start-up performance. Gadenne (1998) suggests that management practices and management style; financing arrangements; innovation; personnel and motivation practices/principles; marketing practices; and planning and control also affect success. Lussier (1996) posits that start-up business success and failure is a function of a number of independent variables such as capital; record keeping; financial control; industry experience; management experience; planning; professional advisor; education; staffing; product/service timing; economic timing; age of owner; partners; parents owned a business; minority; and marketing skills. Christmen *et al*. (1998) take the view that new venture performance is a function of five elements: the entrepreneur; the industrial structure; the business strategy; the resources; and the organizational structure, processes and systems (Chrisman *et al.*, 1998).

This dissertation is concerned with the start-up success of small business in Hong Kong. The resources that can be accessed and the entrepreneur, being two of the five elements suggested by Chrisman *et al.* (1998) as having impacts on new venture performance, are the focus of this study. The resources to which the study

refers are external resources, i.e. specifically those that are available via the external networks. The entrepreneurs examined for this study are specifically in terms of their capabilities in relation to networking.

Before we move on to the next section, to avoid confusion in interpretation of the concepts employed in the study, several frequently used terms of the paper are defined below.

Definition of terms used in the dissertation:

- An external network refers to formal or informal structures connecting individual members, groups or organizations of a firm to other individuals, groups and organizations external to the firm enabling the exchange of information, resources and social support.
- Small businesses are defined as independently owned and operated enterprises that do not dominate their field or industry and have relatively fewer resources than other companies in their market. Small businesses employ 20 or fewer people[1].
- In this study, owner-manager(s), entrepreneur(s), company founder(s), founding team, entrepreneurial team are interchangeable terms; and they can be an individual or a group of individuals of a new business.

1.1.1 Network, small business and start-up success

The web of external relationships that surrounds any small business is capable of providing a wide variety of benefits (Street & Cameron, 2007). The web of

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[1] Based on the definition of small business in the Australian Bureau of Statistics (ABS 2001)

relationships is a 'network' (Ulhoi, 2005). A network is a set of actors connected by a set of ties (Borgatti & Foster, 2003). According to Lee (2007), the early application of network concept to business setting is to avoid uncertainty. Firms that wanted to explore new markets would try to reduce uncertainties by gathering information from network partners. Networks were also used to mitigate the uncertainty of incomplete information about business exchange opportunities (Lee, 2007).

Traditionally network studies in business management are within the realm of strategic management, competitive advantages, relational management, organizational characteristics, administration, and organizational development; and these network studies mainly deal with long-term relations between companies (Witt, 2004). In these studies, the network nodes are companies, and the connecting lines represent information or product exchange (Witt, 2004). For instance, in strategic development and planning, Lu and Beamish (1997) observe small and medium enterprises' use of strategic network alliance in internationalization (Lu & Beamish, 2001). In competitive advantages studies, Alvarez and Barney (2001) describe and identify the actions that entrepreneurial firms take to appropriate more of the value created by their alliance with large firms. They also describe how the relations create economic value for both firms and yet the entrepreneurial firm is not put at survival risk (Alvarez & Barney, 2001). In the area of relational management, Ahuja (2000) examines inter-firm collaborations and identifies specific types of capital that can affect a firm's inducements and opportunities to form linkages. In organization characteristics of small business, Ahwireng-Obeng (2001) analyzes the factors that influence the success of alliances between large and small firms. He identifies two major factors that significantly influence firm performance. The first factor is the

similarity of perceptions of both large firm groups and small firm groups regarding the alliance performance determinants; and the second factor is the strong expectation of the large firm group about high future net benefits from aligning with small firms (Ahwireng-Obeng, 2001). In organizational development aspects, Stuart (2000) examines the relationships between organizations in high-technology industry, and he finds young and small firms can grow and benefit more from strategic alliance partnerships with large and innovative firms than old and large organizations benefit from large and innovative strategic alliance partners (Stuart, 2000).

As indicated earlier, there are many factors identified by researchers (Chrisman *et al.*, 1998; Gadenne, 1998; Krueger, 1993; Lee & Osteryoung, 2001) as important factors for the success of a new firm starting up, regardless of whether the firm is big or small. If the start-up firms are small, they may face additional challenges due to both their small size and newness (Baum *et al.*, 2000). Smallness and newness are liabilities (Venkataraman *et al.*, 1990) for small new firms. Small firms typically lack internal resources because of their smallness by nature (Baum *et al.*, 2000). Their newness suggests that they have no reputation and no past record for reference (Goldberg *et al.*, 2003). In order to compensate for the lack of internal resources and external reputation, owner-managers of small start-up firms have to seek resources from outside their firms, and most of these outside resources come from their social and prior business networks (Fuller & Lewis, 2002; Larson & Starr, 1993).

The value to small start-up firms of the resources obtained from external networks is apparent from many different perspectives. For instance, from the survival perspective, small start-up firms, by the nature of their smallness and

limitation in internal resources, are less insulated from the environmental impact (Chandler, 1996). The liabilities of newness and smallness may turn into major obstacles that make the survival of new firms difficult (Venkataraman *et al.*, 1990). Such difficulty is evidenced by previous empirical research that shows there is a high failure rate of start-up firms within a short period of their establishment (Brüderl *et al.*, 1992). External networks in the form of network alliances may play the role of a buffer, which may reduce any direct impact on the firms from the environmental hazards typically faced by small new firms; thus allowing the small firms to sow seeds for future opportunities (Baum *et al.*, 2000). From the physical resources perspective, external networks can increase the chance of getting financial support from financial institutions in the market (Gulati & Higgins, 2003; Lee *et al.*, 2001). Taking the opportunity perspective, external network ties can act as conduits, bridges and pathways for small firms to external opportunities (Hite, 2005). These ties form important avenues for bringing opportunities and other resources into the firm (Hite, 2005). From the supply perspective, networks in the form of cooperation with business partners can enable new ventures to link their value chains to those of stronger partners, and thus provide superior value to their customers (Brush & Chaganti, 1996). Furthermore, by configuring effective alliance networks at the beginning, start-up firms can access social, technical and commercial competitive resources that normally require years of operating experience to accumulate (Brush & Chaganti, 1996).

1.1.2 Network theory of entrepreneurship

As pointed out by Parke *et al.* (2006), the early study of networks is dominated by social research. The sociological approach to networks takes individuals as the

nodes of the networks; and it investigates communication or information links as if they were connecting lines between individual persons (Bourdieu, 1986; Granovetter, 1973). Network studies later extended to the economic and business management arena. The economic network theory investigates different exchange relations in networks and network actors with the typical object of observation being an individual person or an individual institution (Witt, 2004).

Regardless of whether one takes the sociological approach or the economic approach to networks, an intersection of both approaches is found in entrepreneurial network studies, especially about the impacts on business start-up success (Brüderl & Preisendörfer, 1998; Johannisson, 2000). The network theory approach to entrepreneurship is based on the assumption that founders who use their personal network of private and business contacts to acquire resources and information to support their new start-up will perform better than those who does not (Witt, 2004). In empirical studies, however, the network theory of entrepreneurship is evidenced by both supportive and non-supportive empirical findings even though supportive evidence seems to dominate. For instance, Bosma *et al.* (2004) find that business founders who engage in an organized network have better business performance in several performance measures.   In contrast, in the analysis of whether network activities can enhance small firm performance, Havnes and Senneseth (2001) find no evidence of associated short-term benefits such as growth in sales from the networking activities.   The differences or discrepancies in findings from different researchers, as suggested by Brüderl and Preisendörfer (1998), may be attributable to the difference in operationalizations of the network constructs; and to the fact that the researchers merely choose those measures that meet their research needs without much consideration of the theory of network itself.

1.1.3 Network theory of social capital and start-up success

As pointed out by Borgatti and Foster (2003), social network research in management has increased rapidly in many disciplines. The area of study of network theory encompasses not only network structures, relations and outcome, but also individuals and their attributes (Parkhe *et al.*, 2006). As suggested by Borgatti and Foster (2003), the biggest recent growth area in organizational network research is social capital.

In simple terms, social capital is about the value of connections (Borgatti & Foster, 2003:993). Social capital can exist in many different forms such as trust, information and norms (Coleman, 1988); and different dimensions such as cognitive, relational and structural (Nahapiet & Ghoshal, 1998). Social capital can be viewed as the aggregate of the actual or potential resources linked to an individual through his or her social relations with other individuals (Bourdieu, 1986). As Lin (1999) suggests, the network theory of social capital is based on the fundamental understanding that social capital is captured from embedded resources in social networks. This social resources concept of social capital simply suggests that network ties are resources (Coleman, 1990); and that networks can be viewed as the opportunity structures through which entrepreneurs obtain information, resources and social support (Brüderl & Preisendörfer, 1998; Prevezer, 2001; Torres & Murray, 2003). In a business context, as indicated by Wu (2008), social capital can be conceptualized as a set of social resources that can contribute to firm performance.

Being social resources, network ties facilitate in many different ways of actions of individuals who are within the network structure (Coleman, 1990). For

instance, network ties can provide an individual with useful knowledge about opportunities otherwise not available, and those network ties may prompt awareness in an organization and its members of the availability of such knowledge resources (Lin, 2001). Network relations may also influence decision-making and strategic choices, depending upon the strategic location of actors within a network (Burt, 2005). Further, while the social credentials of an individual reflect the individual's social standing in the network (Lin, 1999), network members may seek to acquire such credentials by forming alliances with such individuals. Social relations can reinforce identity and recognition, and be used to gain public acknowledgement of the actor's claim to resources (Lin, 1999).

It can be noted that the benefits of network ties can characterize social capital as ties to resource-filled others (Borgatti & Foster, 2003); and it is these resource-filled others whose resources may contribute to the success of start-up firms. Founders of small firms may be able to gain access to their social networks to get resources cheaper than the market or resources that are not available in the market (Brüderl & Preisendörfer, 1998). Thus, through network ties, small firms may gain resource advantages leading to the success of their start-up.

Social capital in the Chinese context is equivalent to *guanxi* (Luo & Chen, 1997), and yet *guanxi* is embedded in key aspects of Chinese culture such as trust, 'face-saving' and reciprocity (Wu, 2000). *Guanxi* is an informal, particularistic personal connection between two individuals who are bound by an implicit psychological contract to follow the social norm (Chen & Chen, 2004). All types of *guanxi* (family, school or workplace) involve the exchange of both material things and feelings (Yang, 2001). The exchange of social obligation; the asking and giving

favors of *guanxi* (Chow & Ng, 2004); the value of connections (Borgatti & Foster, 2003); and the embeddedness of resources in the network relations (Lin, 2001), are essentially the same fundamentals of social capital. These Chinese cultural aspects of *guanxi* emphasize more on the relational dimension (Nahapiet & Ghoshal, 1998) of social capital. The personal connections and loyalties sometimes outweigh the importance of organizational affiliations and legal proceedings (Luo & Chen, 1997). Thus, the impact of social capital on new business performance is expected to be very significant in the Chinese business context. As suggested by Luo and Chen (1997), the *guanxi* network is able to enhance a firm's competitive advantages by providing access to resources of other network members.

1.1.4 *Entrepreneurship and networking*

As discussed above, new firms are more likely to rely upon their external network ties to provide both opportunities and resources for the survival and the success of their start-up (Brüderl & Preisendörfer, 1998; Jarillo, 1989). One explanation of new business success is attributable to the personal networks of entrepreneurs and the entrepreneurs' actions on their networks (Witt, 2004). As indicated by Adler and Kwon (2002), a network tie creates the opportunity for social capital transaction, but the mere fact of the tie implies little about the likelihood that the social capital effects will materialize. Thus, one key goal for resource poor small new firms is to build network exchange structures with outsiders that are identified as critical resource suppliers (Larson, 1992). Such network structures can also stabilize the new firm as a player in its target market. In order to obtain high-value benefits from external networks, entrepreneurs may need to intentionally exploit complementary resources in their networks (Rothaermel, 2001). The networking capabilities of owner-

managers, such as their ability to discover opportunities in their networks and their ability to mobilize available resources through their networks, are likely to play a critical role in the success of their new business. The entrepreneurs' social competence (Baron & Markman, 2003) and their ability to manage and coordinate resources (Chandler & Hanks, 1994) may enhance the values of their existing networks.

1.2 Research objectives

Social capital in terms of external network relations plays an important role in respect of the performance of firms, especially the performance of small new firms, because small new firms bear the liability of smallness and newness. The resource embedded in the external personal network of the entrepreneur is expected to be able to reduce the negative effects arising from the liability of smallness and newness.

Drawing upon network theory, specifically social capital theory, this study develops conceptual models that explore the relationship between initial[2] external network resources and small firm start-up success. Social capital can be translated into real business advantages contributing to the success small new business start-up.

From the perspective of the start-up success of small firms, the dissertation has the following objectives:

1. To develop and test hypotheses on the relationship between selected social capital constructs and the start-up success of small business;

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[2] The term 'initial' refers to the pre-existing networks that the entrepreneur possesses prior to the start-up of the new business.

2. To develop a small start-up firm success model based on initial external network (initial social capital) conditions.

3. To empirically test the validity of the model using a traditional statistical approach;

4. To determine statistically if there is an interaction effect of an entrepreneur's networking capabilities (or networking competence) on the relationship between the initial external network structure of start-up firms and firm success.

1.3 Potential contribution to knowledge

The study is expected to add knowledge to the existing network founding hypothesis and network success hypothesis (Brüderl & Preisendörfer, 1998) as well as the dynamic network theories (Hansen & Bird, 1997; Hite & Hesterly, 2001; Lechner & Dowling, 2003) in terms of the application and testing of specific network success hypotheses in the business start-up process. Since major studies on start-up success seldom treat the 'networking expertise' of owner-managers as an important variable (Witt, 2004), and initial network conditions are also neglected in many studies of the start-up process, the present study attempts to fill these gaps. The study will empirically test the 'cause-and-effect' relationship between entrepreneurs' initial network conditions, in both structural and relational dimensions, and the start-up success of small business. The results are likely to add to existing knowledge of the small business start-up process in terms of the effect of initial external network conditions as well as the influence of the entrepreneur's networking capability on the success of start-ups.

While the research is undertaken in the context of Hong Kong Chinese business, the study may have significant implications for new and existing local business owners, lenders, educators, local government policy-makers and future researchers elsewhere. It is hoped that through this greater understanding of start-up success in relation to the initial network ties and the significance of founder managers' interaction with their networks, the founders of small new businesses can increase their chance of survival even though they may not consider their own businesses very successful.

1.4 Dissertation structure

Having introduced the context of the research including the background, objectives and contributions, the dissertation presents the remaining sections as follows. The theories that formulate the research model are examined in the literature review in Chapter 2. Particular emphasis is given to the social capital literature and small business literature. Thus, the work in Chapter 2 is used to support the development of the theoretical frameworks presented in Chapter 3. The research design and methodological approach used to test the frameworks are presented in Chapter 4. Chapter 5 presents the statistical analysis of the results of the data. Chapter 6 summarizes the findings; discusses the implications; describes the limitations of the study; and offers suggestions for future research.

Chapter 2   Literature review

2.1 Introduction

Small business has been shown to play an important role in both developing and developed economies. The success of small business start-up has been drawing widespread attentions both from governments and from research institutions (Ulhoi, 2005). In Hong Kong, small and medium-size firms account for 98% of Hong Kong enterprises[3] and these enterprises employ approximately one-third the Hong Kong labor population[4]. Thus, the success of small business is particularly important to the Hong Kong economy.

Firm-level success has been the main focus of resource-base theory researchers in their understanding of why some firms are more successful than the others (Acedo *et al.*, 2006). Rarely do the resource-base theory researchers pay attention to, or apply the theory to, the study of the success of small businesses, not to mention the success of their start-up. The resource-base view theorizes that internal, idiosyncratic resources can explain the variation in success among firms competing in the same industry (Acedo *et al.*, 2006; Peteraf, 1993). Nevertheless, small new firms inherently have the liability of smallness and newness (Baum *et al.*, 2000). 'Smallness' may suggest that the business is unlikely to have sufficient internal resources that can arouse the interest of resource-base theory researchers. This may partly explain why many studies of success of start-up have traditionally

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[3] Based on "A report on support measures for small and medium enterprises" published by SME committee, Trade and Industrial Department, The Government of SAR Hong Kong in June 2007
[4] Report on "2007 economic background and 2008 prospect", the Government of SAR Hong Kong.

been focused on the entrepreneur and entrepreneurship (Brockhaus & Pamela, 1986; Caird, 1993; Chandler, 1996; Herron & Sapienza, 1992; Lounsbury & Glynn, 2001; Miner, 1997; Naffziger *et al.*, 1994; Shaver & Scott, 1991) rather than the availability of resources; and partly explain why strategic management researchers are more interested in trying to explain why some large firms are more successful than other large firms rather than why some small firms are more successful than other small firms.

With increasing attention being paid to the knowledge-base view (Wiklund & Shepherd, 2003) and greater emphasis being placed on intangible assets in business success, the subject of specific intangible assets such as networks and relational assets is becoming the focus of business performance studies (Bamford *et al.*, 2006; Elfring & Hulsink, 2003; Fuller-Love & Thomas, 2004; Lechner & Dowling, 2003; O'Donnell, 2004; Witt, 2004). The hidden economic power of social networks has recently been drawing much attention in business research (Jarillo, 1989; Kristiansen, 2004; Lee *et al.*, 2001). The understanding that networks can be regarded as business resources (Lechner & Dowling, 2003; McEvily & Marcus, 2005; Rodan & Galunic, 2004), however, can be applied to the study of small firms as well as large firms.

This chapter is structured as follows:
- The first section examines the literature on network theories including the literature showing the historical development of network theories. This section also gives a brief literature overview of some major network theories.
- The next section reviews the literature on social capital, social capital theory and empirical studies on social capital including the literature on network

contributions to small business start-up success. The section then examines the

literature on the Chinese version of social capital, *guanxi*, and relevant empirical

studies on business start-up success.

● The last section reviews the literature on entrepreneurial theory with a focus on

entrepreneurs' networking that influences the success of business start-up.

Before moving on to the literature review on networks and network theories,

the dissertation takes a look at what makes a small new business successful.

2.1.1 What does it take for small new business to succeed?

Empirical studies on start-up business suggest a great variety of success factors for

start-up firms. For instance, Yusuf's (1995) study on South Pacific entrepreneurs

suggests that both individual factors such as certain individual skills and personal

qualities and traits; and environmental factors such as government support, and

political and traditional demands, and the need for balancing these demands with

business concerns, are considered to be critical to small business success (Yusuf,

1995). Huck and McEwen (1991) identify 12 competency areas needed for small

new business to succeed. These areas include planning and budgeting, management,

marketing/selling, advertising and sales promotions, merchandising, financing and

counting, personnel relations, purchasing, production, facilities, equipment and

controlling risk (Huck & McEwen, 1991). Honig's (1998) study on micro-

enterprises in Jamaica finds that even though starting financial capital plays an

important role in new start-up, it fails to differentiate the success of those firms that

are already operating in the higher technological tier. Honig (1998) concludes that

intangible capital such as human capital and social capital significantly impact on firm performance.

As indicated above, there are many factors that may contribute to the success of start-up firms. In general, resources and competent people are the two major areas being highlighted by most researchers (Bosma *et al.*, 2004; Davidsson & Henrekson, 2002; Hansen, 2001). This is simply because business is concerned with the management of resources, and business is run by humans. In the context of small business start-up, resources, especially external resources, and entrepreneurship are two important factors for the success of small business start-up.

Network resource theory of start-up success

Achieving competitive advantage and sustainable competitiveness of firms are considered by strategic management literature to be the major reasons for firm success (Eisenhardt & Martin, 2000). Among different theoretical frameworks, the resource-base view is one of the most influential frameworks yet developed for competitiveness at firm level (Lavie, 2006). The resource-base view theorizes that if a firm has an internal resource that is rare and valuable, it gives the firm competitive advantage; and that if the resource cannot be imitated or be substituted, it gives the firm sustainable competitive advantage (Barney, 1991; Priem & Butler, 2001). As can be seen, the resource-base view is an internal inward-looking view within a firm (Penrose, 1969) and it is concerned with the internal accumulation of assets (Peteraf, 1993). The assumption of ownership and control of resources within a firm is embedded in scholarly definitions of the resource-base view (Barney, 1991; Peteraf, 1993; Wernerfelt, 1984). Lavie (2006), however, argues that this assumption of

exclusiveness and proprietorship prevents an accurate evaluation of firms'
competitiveness; and that this assumption has been challenged in the increasingly
networked business world, which features significant sharing or exchange of
resources. Lavie (2006) therefore proposes to relax this proprietary assumption to
include networks of interconnected firms among firms' idiosyncratic resources. By
relaxing the proprietary assumption, it allows the resources of the network partner
firms to affect the competitive advantage of the focal firm. Each participating firm
can endow a subset of its own resources to the partnering firms with the expectation
of generating common benefits from the shared resources of both firms (Lavie, 2006).

Acedo *et al.* (2006) use the term 'resource-base theory' to label various
branches of research based on resources or capability. One of the branches is the
'relational view'. Dyer and Singh's (1998) relational view suggests that a firm's
networks can develop relationships that result in sustainable competitive advantage
because these relationships can generate relational rents through relation-specific
assets, knowledge-sharing routines and complementary resource endowments. This
relational view is particularly relevant to the small business start-up situation. As
pointed out by Lechner and Dowling (2003), the growth of small new business from
internal resources is very difficult because of its smallness and newness. Start-up
firms need to go outside the firm to get resources through their networks (Witt, 2004).

Gulati and Singh (1998) bring up the notion of 'network resources', which
they describe as embedded in a firm's alliance network (Gulati & Singh, 1998).
Lavie (2006) also views network resources as external resources embedded in a
firm's alliance network that provide strategic opportunities and affect firm behavior
and value. Dryer and Hatch (2006) simply define network resources as valuable

knowledge acquired through the network (Dyer & Hatch, 2006) . As commented by Gulati *et al.* (2000), a network of relations has a profound influence on the firm's performance. Although small start-up firms lack physical resources, an adequate amount of network resources may give the small new firm competitive advantages leading to the success of their business (Ostgaard & Birley, 1996; Premaratne, 2001; Thornton, 1999; Witt, 2004). As Dodd and Parta (2002) indicate, an entrepreneurial network is the sum of total relationships in which an entrepreneur participates. It provides an important resource for entrepreneurial activities (Dodd & Patra, 2002).

Entrepreneurship theory of start-up success

Merely having resources and opportunities are not sufficient for small new businesses to succeed (Chandler & Hanks, 1994). It needs people, specifically the entrepreneurs, to utilize the resources and to exploit the opportunities (Venkataraman, 1997). The entrepreneur is the person who starts up new firms and, therefore, the entrepreneur is naturally the individual who has a significant impact on the success of the new ventures (Krueger, 1993; Pinfold, 2001). Entrepreneurial theory suggests that the success of new start-up firms is determined by the entrepreneurship of the founders (Herron & Sapienza, 1992; Krueger, 1993; Westlund & Bolton, 2003). Venkatarman (1997) notes that most researchers define entrepreneurship solely in terms of who is entrepreneur and what he or she does. For instance, Ulhoi (2005) defines entrepreneurship as an ability of the entrepreneur to recognize, and a risk-willingness to exploit, entrepreneurial opportunities.

Although entrepreneurship focuses on individual entrepreneurs, the entrepreneurship phenomena can occur at multi-level of analysis including the

individual, firm and population levels, respectively, yet most researchers tend to focus on an aspect that is consistent with the discipline of their studies only (West III, 2003). By the nature of its smallness and newness, a small new firm's network is implicitly the same as the entrepreneurial network. As O'Donnell (2004) points out, small firm networking is the networking process in which entrepreneurs are engaged. Ostgaard and Birley (1996) also suggest that in the context of small business start-up, resources are usually obtained through the entrepreneur's personal network. Firm-level and individual-level networking are inevitably crossed. By not differentiating firm-level and individual-level networks, the complexity of multi-level can be reduced (Chandler & Hanks, 1994).

As indicated by Shane and Venkataraman (2000), entrepreneurship is a broad label under which a 'hodgepodge' of research is housed. For this dissertation, entrepreneurship is limited to the networking aspect of entrepreneurs, specifically the competence and capability of the entrepreneur to make use of their external network resources for business start-up. The literature review explores the theoretical and empirical research that seek to explain why external network relational resources and entrepreneurial networking competence can enable the success of small new business start-up.

2.2 Networks and network theories

2.2.1 Networks and start-up success

The term 'network', as suggested by Donckels and Lambrecht (1997), can denote the relationship of entrepreneurs and their firms with the outside world. Smallbone *et al.*

(2005:238) see networks as "*interpersonal linkages that make up social life*", whereas Ulhoi (2005:944) refers to a network as "*dynamic webs of different relations*". Podolny and Page (1998) define a network "*as any collection of actors that pursue repeated exchange relations with one another and, at the same time, lack a legitimate organizational authority to arbitrate and resolve disputes that may arise during the exchange*" (Podolny & Page, 1998:59).

Dubini and Aldrich (1991) view a network as patterned relationships between individuals, between groups, and between organizations. Johannisson (2000) considers a personal network as the origin of new business ventures, and he sees individual ventures as condensations of nodes and ties in the personal network. According to Johannisson (2000), a new venture is the institutionalization of a part of the entrepreneur's personal network; and entrepreneurs start their business by using their personal network as a generic tool for financial, human and social capital (Johannisson 2000: 373). A network provides the owner-managers with resource support, contacts for opportunities, and credibility to overcome the weakness of no prior business record (Ostgaard & Birley, 1996).

Johannisson (2000) identifies three interdependent forms of networks for new ventures: information networks, exchange networks, and influence networks. Information networks provide information on business opportunities; exchange networks provide needed resources; influence networks provide legitimacy of the business activities and barriers for competitors (Johannisson, 2000:370). Adler and Kwon (2002) identify another three types of network relations: the market relations, the hierarchy relations and the social relations; and they propose that the first two

relations will also lead to the last, the social relations, and social relations are important network resources for small business.

Kristiansen (2004) sees a social network as a series of formal and informal ties between the central actor and other actors in a circle of acquaintances. For small new business, networks are seen as channels through which entrepreneurs get access to the necessary resources for business start-up, growth, and success (Kristiansen, 2004). Similarly, in Burt's (1992) view, a network is a conduit for information in three forms: the access, the timing and the referrals. Information enables founders to know about the opportunities, determines when they know it and who gets to participate (Burt, 1992). Network ties, thus, can substitute for tangible economic capital and provide similar economic functions to entrepreneurs as physical capital (Adler & Kwon, 2002; Dasgupta, 2005). Dasgupta (2005) simply treats interpersonal networks of people as capital, which has the same connotation as the term 'social capital'.   As shown in a later section of this chapter, social capital theory provides a theoretical framework to explain small business start-up success.

Witt (2004) suggests start-up success can be attributed to the social embedded personal networks of the entrepreneurs. Witt's (2004) reason is that socially embedded ties allow entrepreneurs to get resources cheaper than they can be obtained on the market, and that they can also secure resources that may not be available on the market, such as reputation and customer contacts (Witt, 2004: 391). This view is shared by Podolny and Page (1998), who suggest that networks allow firms to learn new skills, acquire knowledge, gain legitimacy, improve economic performance and manage resource independence.

As mentioned above, small new firms by definition lack physical resources, and small start-up firms have the liability of both smallness and newness (Baum *et al.*, 2000). New firms are, therefore, more likely to rely upon other forms of resources to enable them to compete and survive (Ostgaard & Birley, 1996; Premaratne, 2001). One important form of resource is the entrepreneur's external networks. In small business start-up, the owner-manager's personal network which is comprised of the firm's relations and contacts with others outside the firm (Burt, 1992). These external network ties potentially provide both opportunities and resources for the success of the new business start-up (Torres & Murray, 2003).

External network relations has been regarded by small business researchers (Ahlstrom-Soderling, 2003; BarNir & Smith, 2002; Brüderl & Preisendörfer, 1998; Donckels & Lambrecht, 1997) as one of the most critical factors for the success of small new business. Entrepreneurs' contacts can provide the means for identifying opportunities or obtaining resources or facilitating the utilization of other resources, which are potential sources of competitive advantage (Burt, 1997). The association of start-up firm performance with external networks has also been evidenced by empirical studies. For example, Backstrom & Lind's (2005) empirical study shows that firms acting in industrial markets are strongly dependent on their firm relationships, both for short-run profits and the long-term development and survival of the company (Backstrom & Lind, 2005).

Premaratne (2001), in the interviews with 303 small businesses in Sri Lanka, examines the relationship between *gratis* resources from network relations and the performance of small enterprises. He finds that entrepreneurs' informal personal

networks help to bring in more resources, which in turn help to achieve higher firm performance (Premaratne, 2001).

Baum *et al.* (2000) investigated the impact of variations in start-up firms' alliance network composition on Canadian biotechnology start-up performance. They compiled the histories of 142 biotechnology firms in the six-year period between January 1, 1991, and December 31, 1996, as well as 471 incumbent biotechnology firms founded prior to 1991; their source being *Canadian Biotechnology*, an annual directory of companies active in the biotechnology field in Canada, published since 1991. For each start-up biotechnology firm, they generated an observation for each year of its existence up to five years. They used five dimensions to measure the firms' start-up performance: revenue; R&D spending growth (investment in innovation and innovative capabilities); number of non-R&D employees; the number of dedicated R&D employees (success in recruiting human capital); and patenting rate (development of intellectual property). Their findings support their prediction that initial performance of start-up is enhanced by establishing a network alliance, enhanced by configuring the alliance into an efficient network that provides access to diverse information and capabilities with minimum cost of redundancy, conflict and complexity. The initial performance is also enhanced by allying with established rivals that can provide more opportunity for learning and less risk of intra-alliance rivalry (Baum *et al.*, 2000). Among the five performance measures, the innovative performance reflected in patenting and R&D spending of start-up firms is found to be the most positively influenced by the alliance of networks (Baum *et al.*, 2000).

It can be seen in the above literature review that linkage of individuals or firms is a way to achieving desired benefits whether it be for entrepreneurs or their firms (Nohria, 1992). The network premise is that individual linkage interactions can create an opportunity structure (Nohria & Garcia-Pont, 1991) for network partners to access feasible benefits. As Nohria and Garcia-Pont (1991) point out, firms connected closely can form a strategic block, which creates an opportunity for partner firms to access complementary capabilities and to establish a negotiated environment to reduce competitive uncertainty.

Having examined some literature on networks and business success, this dissertation now reviews the literature showing how network theory has evolved throughout these years.

2.2.2 *Historical development of network theory*

According to Parkhe (2006), the network theory has its roots in sociology, psychology, anthropology and mathematics. The study of networks, and networking, at the industry, firm, group and individual levels, has attracted significant research attention recently (Castrogiovanni & Justis, 2002; Grandi & Grimaldi, 2003; Neck *et al.*, 2004). In Parkhe's (2006) view, network research has been dominated by sociology researchers since the 1970s, and network studies have many different branches and variety of focuses. Billi (1992) identifies six major schools of thought on the study of networks: the social network theory, the inter-organizational network theory, the exchange-based network theory, the Swedish network theory, the innovation network theory and the location-based network theory. It should be noted that Billi's (1992) six classifications of schools of thought are not independent of

each other. In effect, all six theories either originated in, or are closely linked to

social relations or social network theory. These schools of thought mainly differ in

their specific focus on certain roles of social networks.

Cross and Parker (2004) suggest that the early studies of social networks

date back to Moreno's (1934) idea of drawing a picture of who is connected to whom

in his study of relationships among five hundred girls in the New York State School

for Girls, and among two thousand students in a New York public school and in

other communities (Moreno, 1934). The early social network studies are concerned

with the analysis of social relations (Cross & Parker, 2004). For example, Bott (1957)

and Mitchell (1969) used the concept of networks to analyze social relations in

friends and family interaction (Bott, 1957; Mitchell, 1969). In analyzing social

network relations, Granovetter (1973) developed a theory in the 1970s on the

strength of weak ties, which provided a theoretical foundation for the later bridging

theory (Burt, 1992) of networks. (Weak tie theory is further reviewed in a later

section of this paper.)

Lin *et al.* (1981) expanded the weak tie theory and proposed a theory called

social resource theory. The social resource theory focuses on the nature of the

resources embedded within a network; the theory proposes that weak ties are more

likely to reach an individual who possesses characteristics or controls resources

useful for the attainment of the actor's goals (Lin *et al.*, 1981). This connected

individual is considered to be a social resource (Seibert *et al.*, 2001).

In the 1980s, social network studies moved from individual dyadic relations

to the inter-organization (Paulson, 1985; Tichy, 1981) and the organization's

economic arena; recognizing that a relationship can be a frictional drag that impedes competitive markets as opposed to rational classical and neoclassical economic assumptions of organizations (Granovetter, 1985). The inter-organizational network perspective concentrates on organizational interaction and describes the network population as a whole, rather than considering the network from the viewpoint of the single player (Willoughby, 1993a). It creates a descriptive perspective and helps to explain how ideas quickly transcend the complete organization.

In the area of the organization's economics, Granovetter (1985) puts up a significant argument that many economic transactions between persons are embedded in social relations and are strongly influenced by these relations. Unlike the arm's length relations, which can be predicted by standard economic theory (characterized by short-term, selfish, profit-maximizing behavior), the transaction partners of embedded ties trust each other, and they show reciprocal instead of profit-maximizing behavior. Furthermore, these embedded relations in economic transactions are seen as long-term (Granovetter, 1985). This long-term relationship view is shared by the Swedish school's network style (Billi, 1992) around the same period of time. The Swedish school (Hakansson, 1989; Mattsson, 1984) suggest that the customer–supplier relationship is a long-term trust relationship and that network participants work towards goals of mutual interests with frequent interactions (Johanson & Mattsson, 1987).

Frequent transactions and repeated interaction with the other party by the same actor over time forms exchange relations (Emerson, 1981). A set of connected exchange relations, in turn, forms an exchange network. Exchange-based network theory (Billi, 1992) evolved from early dyadic social exchange (Emerson, 1981), but

it focuses more on the process of transactions between organizations. Exchange-based network theory has different views on the organization's economics compared with Granovetter's (1985) socially embedded economics or the Swedish school's customer–supplier relations. The theory emphasizes more the interaction that must take place between organizations as a way of obtaining scarce resources that are not available internally to a firm (Cook & Emerson, 1984; Cook *et al.*, 1983).

In late 1980s to early 1990s, some network studies shifted their focus to the roles of networks. Typical examples of these studies are innovation network theory (Saxenian, 1990) and its closely associated location-base network theory. Innovation network theory concentrates on the roles of networks in the innovation process such as how tacit knowledge is being shared and information is being exchanged between innovators (Scott, 1991; Stopper, 1993). The theory suggests that collaboration in technology innovation among firms is an essential ingredient for long-term survival (Saxenian, 1991). Interaction with suppliers, customers, public agencies, industry associations and foundations are expected to provide important inputs for the accumulation of innovation capability (Lundvall, 1988). According to Saxenian (1991), innovation network studies are mainly concerned with small to medium-size firms, with particular attention on start-up firms.

Closely linked to the innovation network theory is the location network theory. While innovation network theory suggests firms interact to gather technological and market information, and to obtain other learning from services, components, consulting services and R&D grants; location network theory suggests that the effectiveness of 'learning by interacting' would be boosted by regional clustering of the network actors as evidenced by the economic success of the U.S.

Silicon Valley, the Third Italy and the regional clusters in Southern Germany (Stopper, 1993). Location network theory suggests that close geographical location can ensure maximum information flows, sharing of tacit knowledge and informal information, and speed-up of communication between networks (Willoughby, 1993b).

During the same of period of time, there emerged another field of research, which focused not only on the roles but also on the functions of different social network structures. Coleman (1988) raised the concept of the closed structure network and the advantage of a strong bonding network; Burt (1992) discussed the concept of the structure hole and the advantage of a weak bridging network. The literature of these two lines of thought will be reviewed in a later section on social capital.

In the 1990s, some scholars of social network studies started to focus on the organizational arena of the networking process such as the formation of organizations (Larson & Starr, 1993) and the intra-organizational network (Podolny & Baron, 1997). An example of the formation of organization thinking is Larson and Starr's (1993) proposed network model of organization formation. They suggested a three-stage process for organization formation, from essential dyads to converting dyads to socioeconomic exchange, and then to layering exchanges of multiple exchange processes. They used the three-stage model to explain how entrepreneurs transform their personal networks and networking activities into inter-organizational networks and form stable configurations of inter-organizational exchange. In Larson and Starr's (1993) view, organizations are formed as a result of the crystallization of inter-organization of exchange of relations.

As for the intra-organization studies, an example is Podolny and Baron's (1997) examination of the structure and content of individuals' networks in the workplace. They found that the mobility of an individual could be enhanced by having a large, sparse network of informal ties.

More recently, social network studies have been extended to the studies on how to get work done through networks within organizations (Cross & Parker, 2004), and on how social network relations can impact firm performance (Kristiansen, 2004; Milton & Westphal, 2005; Rodan & Galunic, 2004). Overall, social network studies have been diverging to different branches of theories such as social exchange theory (Ho, 2006); network exchange theory (Willer, 1999); status power theory (Thye, 2000); network governance theory (Jones *et al.*, 1997); network evolution theory (Hite & Hesterly, 2001); and social capital theory (Burt, 2005). The following section gives a brief overview of the literature of these major network theories.

2.2.3 Some major network theories

Most network theories are related to certain aspects or concepts of benefits that may be useful to a new venture's business performance, but their focus and significance on the start-up situation may not be as far-reaching as or as direct as the social capital theories to be reviewed in the next section. A review of these major network theories will now occur.

Exchange network and exchange theory

When a relationship involves a series of repeated transactions by the same actors over time, it is called exchange relations (Lawler & Yoon, 1996). A set of connected exchange relations forms an exchange network. According to Law and Yoon (1996), an exchange network constitutes an opportunity structure that encompasses constraining and enabling effects of the formation of a relationship. A theory associated with exchange relations is 'exchange theory'. According to Ho (2006), exchange theory is based on the notion that people review and weigh their relationships in terms of costs and rewards; it is concerned with the participants' contribution and outcomes (Ho, 2006). Exchange theory suggests that the worth of a relationship can predict its outcome. Ho (2006) further proposes that the outcome of the exchanged value is a mutual benefit for the partners; and that the stronger the relationship between the partners, the better for the partners in terms of accomplishing their strategic goals.

Ho (2006) identifies two types of exchanges: social exchange and economic exchange. Social exchange is based on an implicit agreement that covers non-specific obligations between two parties, and it involves both power relations and social connection relations. Whereas, economic exchange is based on an explicit agreement between two parties, and it involves technology support relations and value-adding relations. Willer *et al.* (1999), however, sees social relations as power relations when people's interest and motives are mixed; and argues that all relations with mixed motives, including economic exchange and coercion, are power relations.

According to Willer (1999), the social exchange perspective of social relations study has been denied the role of social structure by the social research conducted in the 1960s and 1970s. Lawer and Yoon (1998), however, suggest that exchange networks can actually determine the form of exchange relations and the relative power of the partners (Lawler & Yoon, 1998).

To differentiate the social exchange theory and the network exchange theory, Willer *et al.* (1999:21) suggests:

> *Network exchange theory recognizes the efficacy of structure and focuses its investigation on finding the conditions in structures that produce different behaviors. The social exchange perspective denies the efficacy of structure and focuses its polemics on those who claim that structure determines behavior* (Willer *et al.*, 1999)**.**

Network exchange theory

According to Lucas *et al.* (2001), the network exchange theory predicts differences in the resource accumulations of positions in interconnected groups of actors, and the theory distinguishes between networks of strong and weak power (Lucas *et al.*, 2001). In Willer's (1999b) view, the network exchange theory seeks to identify the sources of social power; and the distribution of social power in the network depends on the pattern of relationships among the actors rather than the quality of the actors themselves (Willer, 1999). Walker *et al.* (2000) suggest that the network exchange theory identifies and analyzes structural conditions of power such as configurations of positions, resources, and network connections that determine the distribution of

power in exchange networks. High-power positions gain more favorable exchange ratios (Molm *et al.*, 1999).

Willer (1999) traces the evolution of the network exchange theory from the elementary theory of social structure. The elementary theory describes the mechanics of exchange, conflict, and coercive relations, and the hybrid combination of these three (Walker *et al.* 2000); whereas the network exchange theory focuses on the part of the elementary theory that focuses on the structure of exchange (Willer, 1999).

Walker *et al.* (2000) suggest that the network exchange theory explains how structure and network connections combine to create power inequality; and the network exchange analysis shows how the actors and external factors can transform structures to reduce or nullify inequity. They claim that only five connection types of network exchanges are analytically necessary; and these are as follows: exclusive connection, inclusive connection, null connection, inclusive–exclusive connection, and inclusive–null connection (Walker *et al.*, 2000). A network A-B-C is exclusively connected at B if B can exchange with either A or C but not with both. A network is inclusively connected when network positions must complete two or more exchanges to achieve benefits. An A-B-C network is null connected at B if B can exchange with and benefit from either or both partners. If B must exchange with one A from a set of As and one C from a set of Cs, then B is embedded in an inclusive–exclusive network (B is not disadvantaged in the network because exclusive connection eliminates the effect of inclusive connection). Inclusive–null network is when B needs to complete two or more exchanges to achieve benefits and yet B can exchange with multiple parties (Walker *et al.*, 2000: 326).

Walker *et al.* (2000) further claim that there is no limit to the number of variants of connections, but they can only show two variants of connections that network exchange theory researchers have identified: the hierarchy/mobility connection and the ordered exchange connection. The hierarchy/mobility connection is regarded as a variant of the exclusive connection. The hierarchy /mobility connection can produce strong power effects. Ordered exchange is considered to be a variant of the inclusive connection. Ordered exchange occurs when an actor must complete two or more exchanges in serial order (Walker *et al.*, 2000: 327).

As indicated by Walker *et al.* (2000), the network exchange theory can be applied to studies of cooperation and coalitions in exchange networks. They also propose that institutional rules governing exchange can play a long-term prominent role in the development of the network exchange theory.

Since the introduction of the network exchange theory, theories that are related to exchange theory but focused on specific aspects of human relations have emerged and become individual network theories themselves. The status characteristic theory is one example and the relational cohesion theory is another.

Status characteristic theory

Willer (1999) suggests that the network exchange theory has an opportunity to link to the status characteristic theory (Willer 1999a :246). The status characteristic theory suggests that performance expectation connects valued status characteristics to a hierarchical, status-based structure of power and prestige, and that power actors who

amass substantial resources will attain high status and status-based influence in exchange relations (Walker *et al.*, 2000). As pointed out by Thye *et al.* (2006), a positive status characteristic enhances payoff and a negative status characteristic attenuates payoff. Thye *et al.* (2006) suggest that, in negotiated exchange, a status difference between individuals can lead to power influence, and they proposed a theory of status influence that links the status characteristic theory to the network exchange theory (Thye *et al.*, 2006).

Relational cohesion theory

Lawler and Yoon (1998) claim that, in contemporary network exchange theories, actors are seen as self-interested, unemotional beings, motivated primarily by the extrinsic benefits generated by exchanging with others. They suggest repeated exchanges can generate positive feeling.

In Lawler and Yoon's (1998:871) view, network structures can "*promote cohesive social relations among some actors and not others*". They propose a theory of relational cohesion (Lawler & Yoon, 1996; Lawler & Yoon, 1998) to predict how and when people in exchange become committed to their relationship. They suggest that in networks of equal power, cohesion is more likely to emerge because positive emotions can be produced by successful exchanges. They argue that exchange networks determine the form of exchange relations and that the relative power of partners, in turn, determines the degree to which positive feelings and emotionally based cohesion result. Their theory suggests a process – exchange–to–emotion–to– cohesion – through which a social structure indirectly generates a commitment to exchange relations (Lawler & Yoon, 1998).

While the network exchange theory and its associated theories are more concerned with power over other network members, the network governance theory is concerned with economic advantages.

Network governance theory

Jones *et al.* (1997) propose a network governance theory with an intention to integrate transaction cost economics and social network theories. They define network governance as such:

> *Network governance involves a select, persistent, and structured set of autonomous firms (as well as nonprofit agencies) engaged in creating products or services based on implicit and open ended contracts to adapt to environmental contingencies and to coordinate and safeguard exchanges* (Jones *et al.*, 1997: 914).

According to Jones *et al.* (1997), the social mechanisms of social structure embeddedness, such as restricted access, macro-cultures, collective sanctions, and reputations in network governance can reduce transaction cost and gain comparative advantage over markets and hierarchies. They consider the network form of governance as a response to exchange conditions of assets specificity, demand uncertainty, task complexity and exchange frequency, enabling firms to use social mechanisms for adapting, coordinating and safeguarding exchanges (Jones *et al.*, 1997) . As they indicate, in contrast to markets and hierarchical economic activities, network governance constitutes a distinct form of coordinating economic activities.

The network theories reviewed so far have not addressed the issue of the changes of network relationships over time. The network evolution theory provides a general framework of relationship which changes at different stages of the life-cycle of firms.

Network evolution theory

The network evolution theory has been used to describe the creation, maintenance, and dissolution of a network of actors (Hite, 2005; Hite & Hesterly, 2001; Koka *et al.*, 2006; Low & Abrahamson, 1997; Schutjens & Stam, 2003). The network evolution theory suggests that networks of emerging firms evolve to adapt to the changing of the firms' resources needs at different stages of firm life-cycle (Hite & Hesterly, 2001). These involve the studies on the social and structural evolution process of networks (Doreian & Stokman 1997; Hite & Hesterly 2001). As recognized by Parkhe *et al.* (2006), the network process issues are becoming more popular these days.

Integration of network theories

The literature reviewed above suggests a great variety of network theories are evolving. As Parkhe *et al.* (2006) points out, network theories have not only been focused on structures, relations and outcome, but also on individuals and their attributes. In their view, recent network study has been shifting the focus to pairs of individuals and their relational ties. This view is shared by Borgatti and Foster (2003), in their review of network paradigm; they see a general shift of research away from the individualist, essentials and atomistic explanations toward more

relational, contextual and systemic understanding. Parkhe *et al.* (2006), thus, see that there is a need for greater integration of network theory with other prominent perspectives in management research, such as institutional theory, organizational ecology, resource dependence and transaction economics (Parkhe *et al.*, 2006).

Among the various network theories, the social capital theory provides a significant theoretical framework which suggests a positive association of network benefits with firm performance, especially to performance of small business start-up. Next section reviews literature on social capital theory.

2.3 Social capital theory

Social capital theory proposes that a network provides value to its members by allowing them to access the social resources that are embedded within the network (Bourdieu, 1986; Seibert *et al.*, 2001). Burt (2005) claims social capital theory explains how people do better because they are connected to certain others, trusting certain others, obligated to support certain others, and dependent on exchange with certain others. In the context of firms, social capital can explain why some firms perform better than others because they are connected to certain others, individuals or firms or groups (Burt, 2005; Koka & Prescott, 2002).

2.3.1 What is social capital?

Social capital as a concept was originally developed by sociologists (Portes, 1998). According to Westlund and Bolton (2003), the first explicit use of the term 'social

capital' is in the United States by Hanifan (1916)[5]. Fuller and Tian (2006), however,

suggest the term 'social capital' first appears in Jacobs' (1961) book[6], *The Death and*

Life of Great American Cities, in which social capital is used to explain the survival

of family and the function of neighborhoods. Seibert *et al.* (2001) propose the first

approach to the conceptualization of social capital is Granovetter's (1973) weak tie

theory, which focuses on the strength of the social tie used by a person in the process

of finding a job. Portes (1998) suggests the first systematic contemporary analysis of

social capital is by Pierre Bourdieu (1986) in Europe. Bourdieu (1986:248) defines

the concept *social capital* as: "*the aggregate of the actual or potential resources*

which are linked to possession of a durable network of more or less institutionalized

relationships of mutual acquaintance and recognition".

Bourdieu (1986) sees social capital as consisting of two parts: the social

relations, which allow individuals to claim access to resources possessed by their

network members; and the amount and quality of those resources. Bourdieu (1986)

defines the volume of social capital as a function of the size of the network and the

volume of the capital possessed by the networked individuals. He argues that the

relationships and the assets made available through the relationships are a significant

part of the meaning and power of social capital (Bourdieu, 1986).

Coleman (1988) refines the way of analyzing social capital and introduces

the concept of social capital to social theories, attempting to resolve two major

intellectual streams of description and explanation of social actions; one stream

suggests social action is governed by social norms, rules and obligations; while the

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[5] Hanifan, Lydia, J., 1916, "The Rural School Community Center", *Annals of the American Academy Political and Social Science* 67, pp 130-138.
[6] Jacobs, J.: 1961, *The Death and Life of Great American Cities* Penguin Books, London, pp. 122–151.

other focuses on social action as based wholly on self-interest. He defines social capital by its function. To describe social capital, Coleman (1988:S98) states: *"It [social capital] is not a single entity, but a variety of different entities having two characteristic in common: they all consist of some aspect of social structure, and they facilitate certain actions of individuals who are within the structure"*.

2.3.2 Concepts and definitions of social capital

Since Coleman (1988) applied the concept of social capital to social theories, the concept of social capital has been used with very diversified meaning (Burt, 1992; Coleman, 1988; Woolock, 1998), which varies according to the researcher's focus on his or her specific aspects of social capital research. For instance, Ulsaner (1999) considers social capital as a wide-ranging set of ideas about values, social connections and civic engagement; and holds that the social capital approach stresses one's obligations to others beyond considerations of one's self-interest (Uslaner, 1999).

Nahapiet and Ghoshal (1998) view social capital as the sum of actual and potential resources embedded within, available through, and derived from the network of relationships possessed by individual entrepreneurs. Anderson and Jack (2002) also consider social capital to be embedded within networks of mutual acquaintances and based on mutual recognition. Anderson and Jack (2002) conceptualize social capital as a process, a bridge-building process that links individuals. They use an analogy of bridge construction to describe social capital. In this analogy, networks are viewed as a series of bridges that link numerous individuals. The strength of a bridge's construction serves as an indicator of the amount of traffic-carrying capacity. Thus, a robust bridge is an effective channel for

easier exchange.   In order to build a bridge fast, it requires the construction from both sides of a gap, which is the mutuality in social capital (Anderson & Jack, 2002). The structure of these bridges is seen as an organic one that requires nurture and maintenance to suit the traffic (Anderson & Jack 2002: 207).

Lin (1999:35) suggests a definition of social capital as *"resources embedded in a social structure, which are accessed and/or mobilized in purposive actions"*.   In this definition, Lin includes three elements in the concept: the 'structure' in which resources are embedded; the 'opportunity', which is expressed as the accessibility to such resources by individuals; and the 'use' of such social resources by individuals in purposive actions. To facilitate operationalization of the elements of social capital, Lin (1999:39) further suggests another definition of social capital as *"an investment in social relations by individuals through which they gain access to embedded resources to enhance expected returns of instrumental or expressive action"*.

In constructing an economic model for social capital, Glaeser *et al.* (2002:4) define individual social capital as *"a person's social characteristics, including social skills, charisma, and the size of his Rolodex – which enable him to reap market and non-market returns from interactions with others"*. This definition links social capital to economics and business, which is similar to Cooke's (2007) definition. Cooke (2007:80) defines social capital as *"the application or exercise of social norms of reciprocity, trust and exchange for political or economic purposes"*.

Social capital seems to be an 'elastic' term (Lappe Due Bois, 1997:119) covering a variety of other concepts such as social networks, inter-firm networks,

social support, trust and social exchange (Adler & Kwon, 2002). As Sobel (2002) observes, almost everyone who writes about social capital finds it necessary to provide some definitions.

Trying to unify diversified various concepts of social capital, Adler and Kwon (2002) put up a definition incorporating three key aspects of social capital: the substance, the sources and the effect of social capital. Their definition of social capital is as follows: "*Social capital is the goodwill available to individuals or groups. Its source lies in the structure and content of the actor's social relations. Its effects flow from the information, influence, and solidarity it makes available to the actors*" (Adler & Kwon, 2002:23).

Adler and Kwon's (2002) definition acknowledges the substance of social capital as goodwill, which is engendered in social relations, and is only available to certain individuals or a certain group of people. In explaining the source of social capital, they introduced an 'opportunity-motivation-ability' framework. As for opportunity, they argue that the network tie is the basis that has to be present, and through which an opportunity of benefits from the social capital can be extracted. The motivation of the donor in contributing to the actor, as suggested by Adler and Kwon (2002), is the specific content of the shared norms. This leads to trust and trustworthiness, and trust itself is considered by many researchers as a key motivational source of social capital (Carpenter *et al.*, 2004; Sheppard & Sherman, 1998; Ulhoi, 2005). The ability refers to the actor's competencies and the magnitude of the resources made available to the actor at one end of the networks. Adler and Kwon (2002) argue that all three sources (opportunity, motivation, ability) must be present in order to activate the benefits of social capital, and that the benefits of

social capital include the source of information, the influence and the solidarity. This definition also addresses Portes' (1998) argument to distinguish the sources of social capital (those agreeing to these demands) and the resources themselves.

Oh *et al.* (2006) extend the concept of social capital to groups. They introduce the concept of group social capital, which they call 'multilevel model of group social capital', trying to provide a way to examine group effectiveness as shaped by social relationships within and outside groups. They define group social capital as *"the set of resources made available to a group through group members' social relationships within the social structure of the group itself, as well as in the broader formal and informal structure of the organization"* (Oh *et al.*, 2006: 570). This definition considers the group itself to be a social structure as a whole as well as an aggregate of its parts, which recognizes group in a broader context (Oh *et al.*, 2006).

Social capital constructs, attributes and relations with other capital

Coleman (1988) identifies three forms of social capital: obligation and expectation, information channel, and social norms. Lappe and Du Bios (1997) suggest that the term *social capital* represents the sum of informal, associative networks, along with social trust. Others consider network centrality (Ahuja, 2000a); structural holes (Burt, 1992); and connectivity and embeddedness (Uzzi, 1997) to be at least related to social capital constructs.

Nahapiet and Ghoshal (1998) view social capital in terms of three clusters of dimensions: the cognitive dimension, the structural dimension, and the relational

dimension; recognizing that these dimensions are highly interrelated. The cognitive dimension refers to those resources providing shared representation, interpretations, and system of meaning among parties (Nahapiet & Ghoshal, 1998). The structural dimension refers to the overall pattern of connections between actors, as in who is connected and how to reach them. The relational dimension focuses on the particular relations people have and on how people, through these relationships, fulfill social motives such as sociability, approval and prestige (Nahapiet & Ghoshal, 1998); obligation and expectation (Granovetter, 1985); trust and trustworthiness (Levin & Cross, 2004); and the realization of identity and identification (Burke, 1997).

Koka and Prescott (2002) conceptualize social capital as a multi-dimensional construct, which yields three distinctly different kinds of information benefits in the forms of information volume, information diversity, and information richness. They conceptualize these three forms of information as dimensional constructs of social capital in the context of business alliance. Information dimension emphasizes the quantity of information that a firm can access and acquire. Information diversity emphasizes the variety of information. Information richness emphasizes the quality and nature of information that a firm can access through its relations (Koka & Prescott, 2002).

Glaeser *et al.* (2000) identify seven facts or characteristics of individual-based social capital. First, the relationship between social capital and age is first increasing and then decreasing. Second, social capital declines with expected mobility. Third, social capital investment is higher in occupations with greater returns to social skills. Fourth, social capital is higher among homeowners. Fifth, social connections fall sharply with physical distance. Sixth, people who invest in

human capital also invest in social capital. Seventh, social capital appears to have interpersonal complementarities.

Anderson and Jack (2002) suggest an alternative term for social capital. They call it 'networking capital' as they think this term can capture the essence of relationship phenomena. Network ties are, therefore, the fundamental constructs of social capital.   In Lappe and Du Bois' (1997) society perspective, social capital is the glue that holds people together and creates the norms of decency needed for other aspects of society to function (Lappe & Du Bois, 1997).

Social capital and trust

Trust is the relational dimension of social capital (Nahapiet & Ghoshal, 1998). Many researchers operationalize social capital as trust (Carpenter *et al.*, 2004; Knack & Keefer, 1997; Wu & Leung, 2005). Ring and Van De Ven (1992) define trust as mutual confidence in one another's moral integrity or goodwill (Ring & Van De Ven, 1992). Sheppard and Sherman (1998) conceptualize trust in the light of type of dependency and independence in the relationship. They use four different dimensions to measure trust: shallow dependence, shallow independence, deep dependence and deep independency (Sheppard & Sherman, 1998). Macknight *et al.* (1998) distinguish between trust levels and trust durability (fragility/robustness). They point out that a high initial level of trust intention can be fragile, whereas a low level in turn may not be very fragile. They suggest the fragility of a trust depends on the kinds of trusts under specific circumstances (McKnight *et al.*, 1998).

Welter and Smallbone (2006) suggest that trust has a positive role as well as dysfunctional effects on new business venturing, and that it should not be assumed that trust is necessarily an inherently positive influence on entrepreneur behavior. After all, trust as social capital is found to help in reducing the complexity of business operations (Welter & Smallbone, 2006); allowing business relationships with strangers (Fukuyama, 1995); lowering transaction costs for business (Jarillo, 1989); and facilitating network activities (McKnight *et al.*, 1998). Portes (1998) suggests that in some cases trust exists because obligations are enforceable, not through recourse to law or violence but through the power of community, the threat of community sanctions and ostracism. Anderson and Jack (2002) describe trust as the 'glue and lubricant' that holds the network together. Without trust, there will be no social capital network (Wu & Leung, 2005).

Social capital vs economic and physical capital

Coleman (1988) sees social capital is comparable to financial capital, physical capital and human capital, except that social capital is embedded in relations. Nevertheless, in the comparison of social capital with physical capital, Solow (2000) argues that physical capital has a rate of return and can be readily measured by summing past investment net of depreciation, but that social capital cannot be assessed in this way. Ostrom (2000) observes that, in contrast to physical capital, social capital appreciates with use. The traditional model of physical capital, which depreciates with use, gives no insight into how to model the changes of social capital over time (Ostrom, 2000). Some scholars (Arrow, 2000; Solow, 2000) even consider the weakness of social capital in comparison with physical capital to be such that its terminology as 'capital' cannot be justified.

Adler and Kwon (2002) made a comparison between social capital and economic capital used in daily business terms, and found: social capital could be invested; social capital could be both appropriable and convertible; social capital could either be a substitute for or complement other resources; social capital needed maintenance; although social capital was not private property, it was available only to insiders; social capital was not located in the actors but in their relations with other actors; social capital did not seem amenable to quantified measurement (Adler & Kwon, 2002). Adler and Kwon's (2002) conclusion was that social capital did, to a large extent, resemble economic capital.

Westlund and Bolton (2003) also made a comparison between social capital with other forms of capital. Their conclusion was similar to Alder and Kwon (2002) that social capital could be analyzed in the same way as other capital except that social capital had some other special attributes.

Nevertheless, most scholars view social capital as a useful asset with high economic value (Anderson & Jack, 2002; Bourdieu, 1986; Dasgupta, 2005). As Bourdieu (1996) suggests, the outcomes of possession of social capital will ultimately be reducible to economic capital as economic capital is at the root of all the other types of capital. Andersen and Jack (2002) even see the process of accessing social capital as the earning of social capital.

Social capital vs human capital and intellectual capital

Coleman (1988) differentiates social capital from human capital. He considers social capital to be a network attribute that is found in the network links between

individuals, whereas human capital is an individual-related resource residing in the individual (Coleman, 1988; Coleman, 1990). In the analysis of social capital in family and community, Coleman (1988) concludes that social capital has an important effect in the creation of human capital, particularly in the creation of the next generation of human capital. Conversely, Glaeser *et al.* (2000) suggest people who invest in human capital also invest in social capital.

Human capital is embedded in the concept of intellectual capital. Human capital is one of the three perspectives that Bontis (1998) uses to conceptualize intellectual capital. Bontis' (1998) other two perspectives of intellectual capital are the structure capital and the customer capital. For human capital, Bontis (1998) refers to the tacit knowledge of the organization's members. Structural capital refers to the structural tacit knowledge of the embodied organization itself such as the mechanisms and structure of the organization that can help to support employees in their quest for optimal intellectual performance (Bontis, 1998). Customer capital refers to the knowledge of marketing channels and customer relationships. Bontis (1998) thus considers an organization's intellectual capital to be an essential source of competitive advantage. At this point, it is therefore suggested that since social capital can create human capital which is part of intellectual capital, social capital is thus indirectly linked to intellectual capital. Pena (2000), however, sees a more direct causal relationship between intellectual capital and social capital.

In Naphapiet and Ghoshal's (1998) view, organizational intellectual capital is a socially and contextually embedded form of knowledge and knowing, which is not the same as the aggregation of the knowledge of a set of individuals. They see the roots of intellectual capital as deeply embedded in social relations and in the

structure of these relations. They also note that intellectual capital is created through the combination and exchange of existing intellectual resources in the form of explicit knowledge, tacit knowledge and knowing capability. They find the process fits well with different facets of social capital. Thus, they propose that social capital facilitates the creation of new intellectual capital, and that intellectual capital facilitates the development of social capital (Nahapiet & Ghoshal, 1998).

2.3.3 Bonding social capital and bridging social capital

Adler and Kwon (2002) find that the social network studies have been focused either on the relations (strong or weak) that an actor maintains with other actors, or on the structure of relations among actors within the network. As noted by Nahapiet and Ghoshal (1998), structural and relational dimensions of social capital are interrelated. The distribution pattern of weak ties (Granovetter, 1973) and strong ties (Krackhardt, 1992) of entrepreneurs forms the structure of their network, whether it is bridging or bonding. Before reviewing the literature on the network structure of bridging and bonding, let us take a look at Granovetter's (1973) strength of weak ties concept.

<u>Strength of weak ties</u>

Granovetter (1973) developed the concept of the strength (benefits) of weak ties. He sees weak ties as indispensable to the individual's opportunities and their integration into communities, especially in terms of finding a job and diffusion of ideas (Granovetter, 1973). According to Levin and Cross (2004), weak ties can also be used in many other aspects, such as technical advice and knowledge transfer (Levin & Cross, 2004).

Granovetter (1973:1361) defines the strength of a tie as *"the combination of the amount of time, the emotional intensity, the intimacy (mutual confiding), and the reciprocal services of the tie"*. Based on this concept of tie strength, Granovetter (1973) suggests that no strong tie can be a bridge and that all bridges are weak ties; Granovetter's concept of a bridge being a line in a network that provides the 'only path' between two points (Granovetter, 1973:1364). Granovetter's logic is that if there is a specific strong tie as a bridge, then neither of the two points attached to this bridge can have other strong ties. This is because if there are other strong ties attached to either of these two points, then the above mentioned specific strong tie is unlikely to be the 'only' path, and thus it can no long be qualified as a 'bridge'. In a social environment, it is unrealistic that an individual has only one strong tie (Granovetter, 1973).

Granovetter (1973) considers a bridging function may be served locally, and that only weak ties may be local bridges. The significance of Granovetter's weak ties lies in the idea that these ties are local bridges that create shorter paths. Weak ties can diffuse information to reach a large number of people, and traverse a greater social distance than strong ties (Granovetter, 1973); social distance, as referred to by Granovetter (1973), being the number of lines in the shortest path from one individual to another in a network. Granovetter (1973:1376) thus suggests in the following: *"weak ties are more likely to link members of different small groups than strong ones, which tend to be concentrated within particular groups"*. This is the essence of Granovetter's proposition of the 'strength' of weak ties. A weak tie is not really 'weak' *per se*. A weak tie is more effective than a strong tie in terms of information flow between members of a small group and many different groups of people at a great social distance.

At this point, let us examine two major streams of social capital in network structures: the open bridging structure, which is associated with weak ties; and the closed bonding structure, which is associated with strong ties.

Bonding and bridging network structures

Johannisson (2002) indicates that the literature usually differentiates two types of network structures: vertical network and horizontal network. His vertical network refers to asymmetric ties which are usually in the form of a value-added chain. His horizontal network is symmetric ties, and usually refers to competitors. In analyzing the definition of social capital, Adler and Kwon (2002) broadly classify the network structure of social capital into two views: the bonding view and the bridging view. Their bonding view refers to those who focus on collective actors' internal characteristics, such as the collective cohesiveness, which can facilitate the pursuit of collective goals. They consider the bonding view to be an internal approach (Adler & Kwon, 2002). Coleman's (1988, 1990) closed network structure and Krachardt's (1992) strong ties are examples of Adler and Kwon's bonding view.

Adler and Kwon's (2002) bridging view refers to those who focus on the network linkage, in which the actors can be greatly facilitated by their direct and indirect links to other actors in a social network. They consider the approach of the bridging view to be an external approach (Adler & Kwon, 2002). Burt's (1992) structure holes and Granovetter's (1973) weak ties are examples of Adler & Kwon's (2002) bridging view.

Bonding social capital – Coleman's closure network structure

The closure of the social network is considered by Coleman to be very important in facilitating social capital, and that closure is a property of social relations on which effective norms can depend (Coleman,1988). Coleman's (1988) 'closure' means the existence of sufficient ties between a certain number of people to guarantee the observance of norms (Portes 1990: 4). According to Coleman (1988), 'norm' is an effective and powerful form of social capital. He argues that the norm not only facilitates certain actions but also constrains others; and that norms can make one forego self-interest and act in the interests of the collective whole (Coleman 1988). Coleman (1988) explains that the reason why norms do not come into existence in many social network structures is due to the lack of closure networks. He argues that reputation and the collective sanction (another form of social capital) depend on trustworthiness, which can only be applicable to a closed structure and not to an open structure.

In Coleman's example of relations between parents and children, and their relations to those outside the family, Coleman used the term 'intergenerational closure' to describe his concept of closure in the process of raising children (Coleman, 1988: S106). There are relations among children within a school, and this relationship will develop norms about each other's behavior. The determination of whether this network is 'closure' or 'non-closure' is the presence or absence of links between the parents of the children in the same school (Coleman, 1988). If the parents of the children are linked to other parents, the parents can discuss their children's activities and come to a consensus about standards and about sanction. A parent can be reinforced by other parents in sanctioning his or her own children's

action or in monitoring other children's behavior in addition to his or her own children. Coleman further argues that the closure of network structure is important for the trustworthiness of social structures. He simply suggests that closure creates trustworthiness in a social structure (Coleman, 1988:S108).

In Coleman's view, trustworthiness allows the proliferation of obligations and expectation. A person who has obligations in one context may be called on to aid other members who have problems in another context. A closure network thus can allow the resource of one relationship to be appropriated for use in the others (Coleman, 1988). In his example of the wholesale diamond market, the existence of a strong norm of trustworthiness in a close tie network is appropriable by all members of the network in that it facilitates diamond transactions without recourse to legal contracts (Coleman 1988: S99).

Bridging social capital – Burt's structure hole theory

Burt's structure hole theory describes how a social structure of a competitive environment can create entrepreneurial opportunities for some players (Burt, 1992). As suggested by Burt (1992), the connections to others provide opportunities, and the lack of connections among those others are the structural holes. Structural holes are opportunities for certain actors, and if there is no hole, there is little opportunity (Burt, 1992). According to Burt (1997:340), *"the structural hole is an opportunity to broker the flow of information between people and control the form of projects that bring together people from opposite side of the hole"*.

The significance of Burt's structure hole argument lies in the opportunities it observes that generate both information benefits and control benefits. Structural holes can give certain players a competitive advantage in the social, economic and political arena. Burt's (1997:340) information benefits include the accessibility to direct information as well as the referrals to information sources to enable the actors to make the right decision at the right time and the right place. As for the control benefits, since the disconnected contacts have to go through the bridge of the actor to communicate to other contacts, the actor can adjust his or her image or negotiate for favorable terms with each contact (Burt, 1997).

Burt's structure hole theory suggests that an actor in a network position can profit from his or her interactions and transactions with others only if he or she is connected to others who are not themselves connected and well organized. Thus, one important condition for the structure hole to work is that these contacts need to be non-redundant contacts. As Burt (1992:18) puts it: [structure hole] *"is…the separation between non-redundant contacts. Non-redundant contacts are connected by structural hole. A structural hole is a relationship of non-redundancy between two contacts"*.

It should be noted that Burt's network redundancy is conceptualized within the perspective of network benefits rather than the structural and role equivalence. Burt (1992) uses the analogy of substitutable producers to explain his concept of redundancy. He views the redundancy concept as equivalent to substitutability (Burt, 1992:42). He suggests redundancy has two empirical indicators: cohesion and structural equivalence. For cohesion, Burt argues that contacts strongly connected to each other are likely to have similar information and so provide redundant benefits.

For structural equivalence, Burt argues that linking the actors to the same third parties means they will have the same sources of information, and so provide redundant benefits. He simply states that a network rich in non-redundant contacts is rich in structural holes (Burt: 1992:47).

In Burt's structure hole theory, the best network position is characterized by a structure that has a person whose connections are surrounded by structural holes, while he or she is not surrounded by structural holes. Actors with relationships free of structural holes of their own, and rich in structural holes at the other end, are what Burt calls 'structurally autonomous' (Burt, 1992).

In describing the relationship between structure hole and social capital, Burt (1997) argues that the structure hole theory can describe how social capital is a function of brokerage opportunities in a network. He further claims that the structure hole theory gives the concept of social capital a concrete meaning (Burt 1997:340).

Controversy of bonding and bridging social capital – which is better?

In Patulny and Svendsen's (2007) view, the strength of the conceptual distinction of bridging and bonding is in offering a theoretical framework that acknowledges social capital as capable of both collective good and evil, involving both positive and negative alternatives. These two concepts, however, appear to be mutually exclusive.

Patulny (2004) suggests the motivation behind the conception of bonding and bridging social capital is prescribed by two types of trust: 'generalized trust[7]' and

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[7] According to Patulny (2004), generalized trust is normative and related to morals and faith in others rather than information. Generalized trust allows different people to share common or non-excludable goods.

'particularized trust[8]'. Patulny and Svendsen (2007) suggest that generalized trust accords with bridging social capital and open groups, and it promotes public goods. As Putnam (2000) points out, bridging social capital creates larger networks and leads to a cohesive, well-functioning society. In contrast, Patulny and Svendsen's (2007) particularized trust accords with bonding social capital and closed groups, taking care of the group's own interests through the accumulation of private goods. Thus, at a societal level, these views reflect an apparent notion that bridging capital is positive or good, and bonding capital is negative or bad (Patulny & Svendsen, 2007). Nevertheless, both positive and negative types of social capital simultaneously exist in the same society (Portes, 1998).

The negative notion of bonding social capital appears to come from the constraints of social norms, which reduce individual independence (Burt, 1992). As indicated by Walker *et al.* (1997), social capital is a means of enforcing norms and behavior and it acts both as a resource and a constraint. According to Putnam (2000), norms that prevail in one group of network may obstruct others, especially when they are discriminatory or the networks are socially segregated (Putnam, 2000). In Putnam's (2000:366) view, the solidarity of social capital comes at the cost of individual freedom. He points out that social capital that bonds with others may reinforce social stratification and widen social inequalities. At firm level, Gulati *et al.* (2000) point out a possibility that a network may lock firms into undesirable situations such as an unproductive relationship or preclusion of partnering with other viable firms (Gulati *et al.*, 2000). In a workplace social network study, Labrianca and Brass (2006) go further, suggesting that the negative relationships in a social

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[8]Particularized trust is linked to information and experience with specific other people (Uslaner, 1999). Particularized trust tends to transform non-excludable into excludable goods via private personal lines rather than public ones.

network may have greater power than the positive relationships in explaining workplace outcomes (Labianca & Brass, 2006).

Having given so much negatives about bonding social capital, it should be noted that norm enforcement (Coleman, 1990) can also turn out to be positive and good in other contexts. Whether norm enforcement of bonding social capital is good or bad depends on the context and usage of social capital. Good or bad represent two sides of the coin. As argued by Sobel (2002), bonding capital may facilitate good behavior by publishing past actions and making it possible to punish non-cooperative actions. Putnam (2000) suggests bonding social capital provides denser networks. Dense networks can increase the quality and reliability of third-party monitoring needed to enforce cooperative dynamic equilibrium (Sobel, 2002). Further, Chwe (1999) suggests strong and dense ties are better for collective action, and that dense networks may act to create common knowledge. Tsai (2006) suggests strong connections make it easier to achieve better effects in terms of mutual network learning, adapting to an uncertain environment, knowledge flow and innovation.

Looking at the positive side, scholars (Chwe, 1999; Granovetter, 1985; Lechner & Dowling, 2003; Oh *et al.*, 2006; Putnam, 2000; Sobel, 2002) tend to take the position that both bridging and bonding are good for different things. For instance, a bridging network is more likely to produce leads for new jobs (Granovetter, 1973, 1985) and be better for obtaining information (Chwe, 1999); but for ensuring that small children get stimulation, bonding social capital is better (Putnam, 2000).

The position that bridging and bonding are good for different things seems to be particularly relevant to the start-up situation. As suggested by Hite and Hesterly (2001), the need for specific types of networks varies over time. At the very early stage, strong tie network is likely to be better as the emotional support may help the entrepreneur to overcome psychological difficulties (Brockhaus & Pamela, 1986) in the adaptation of the significant change in his or her career life. Whereas immediate after business establishment, weak tie network, which is good in providing information benefits, can play the role in the survival, maintenance or expanding the ongoing business.

As Sobel (2002) suggests, to know which type of network is the best depends on what social capital is going to be used. To Sobel (2002), the bonding network closure view concentrates on the average value of network investment, while the structural hole or bridging view concentrates on marginal value. This view is supported by Lechner and Dowling (2003), who point out that both bonding and bridging social capital are important to firms since they fulfill different functions. As indicated by scholars (Hite & Hesterly, 2001; Uzzi, 1997), the search for the optimal mix of strong bonding and weak bridging ties is a key issue in the determination of network benefits. This study therefore takes the view that both bonding and bridging ties are important to small business start-up. How important are the weak ties and the strong bonding ties respectively to the business performance of small start-up are the questions to be answered in this study.

Other than individual social capital, there is a group-level perspective of social capital (Oh *et al.*, 2006). Oh *et al.* (2006) see group social capital as having three different parts: group's social capital conduits, group's social resources and

group's effectiveness. The group's social capital conduits include both internal closure relationships and bridging relationships, and external bridging relationships. They suggest configuring these conduits to maximize the utilization of group social capital resources (information, political resources, mutual trust and emotional support), which in turn leads to group effectiveness such as group performance and individual growth and satisfaction. They propose that the optimal configuration happens in a situation where the structure has both moderate closure and diverse bridging ties. Their reasons for moderate closure ties are that excess group closure may negatively affect group social capital resources; and that strong ties tend to have redundant information, and strong closure groups can constrain individual group members (Oh *et al.*, 2006).

2.3.4 Social capital and business performance

Since the concept of social capital was formulated, social capital has become a core concept in business, political science, and sociology (Burt, 2005). There seems no argument against Bourdieu's (1986) proposition that relationships and the assets made available through relationships are a significant part of the meaning and power of social capital. As Sobel (2002) points out, the value and the uses of social capital depend on the institutional environment, which means taking into account the social, economic and legal implications of the actor's actions.

The concepts of social capital theory and its network forms have been applied to many business studies on firm performance (Parkhe *et al.*, 2006). For instance, social capital theory has been adopted to explain a variety of business and business-related outcomes, such as firm growth (Ostgaard & Birley, 1996); career

success (Seibert *et al.*, 2001); product technology development (Atuahene-Gima & Murray, 2007); technical knowledge exchange (Vainio, 2005); business start-up (Hansen, 2001; Liao & Welsch, 2005); innovation (Tsai, 2006); marketing (Cooke, 2007); and customer relationships (Chang & Tseng, 2005). Most empirical studies suggest a positive association of social capital with business outcomes. The following are examples of relevant empirical studies analyzing the advantages of social capital in different aspects of business such as marketing, managerial performance, knowledge acquisition, firm profitability and entrepreneurial success of businesses.

In marketing, Cooke (2007) studies market interaction among small and medium-size enterprises in United Kingdom and finds that the small and medium business markets are almost wholly constituted of social capital. Cooke (2007) further finds that high-performance firms are the most intensive users of social capital, and that social capital contributed significantly to the dynamic capabilities of the firm. Trust, especially of the reputation or goodwill, is found as the key form of social capital in the relational embeddedness. Cooke (2007) puts forth a strong statement: "*without social networks most firms cannot function in markets*"(Cooke, 2007: 79).

From the management perspective, Moran (2005) studied the impact of managers' social capital on managerial performance in a sample of 120 product managers and sales managers of a pharmaceutical firm. He finds both a structural dimension and a relational dimension of social capital can influence managerial performance (Moran, 2005). The structural dimension plays a stronger role in explaining more routine and execution-oriented tasks, such as managerial sales

performance; whereas the relational dimension plays a stronger role in explaining new, innovation-oriented tasks such as product and process innovation (Moran 2005).

In knowledge acquisition, Yli-Renko *et al.* (2001) examined the effects of social capital on knowledge acquisition and knowledge exploitation in key customer relationships in a sample of 180 entrepreneurial high-technology ventures based in the United Kingdom. Their results suggest that the social interaction and network-ties dimension of social capital are associated with greater knowledge acquisition, but the relationship quality dimension is negatively associated with knowledge acquisition. Their results also provide evidence that knowledge acquisition plays a mediating role between social capital and knowledge exploitation (Yli-Renko *et al.*, 2001).

From the firm profitability perspective, Honig (1998) examined the performance of 215 informal micro-enterprises in Jamaica and studies the influence of human capital, social capital, and financial capital of the owners on their business profitability. He found that social capital, as operationalized by frequent church attendance and marital status of the owner, was generally able to increase the profitability of business (Honig, 1998). Honig's (1998) finding, however, also shows that some market environments reward specific types of social capital, whereas other market environments may actually penalize it. He further suggests social capital to be culturally rooted (Honig, 1998:391).

In entrepreneurial success studies, Kristiansen (2004) did a qualitative case study on two entrepreneurs of different ethnic and cultural origins, working in the wood industry in the Tanga region of Africa, to learn about how social networks play a role in business development. In addition to the in-depth interviews with the

entreprenuers, he also used a variety of data sources such as interviews with family members, friends and customers; participant observations; and written documents, for data 'triangulation'. His results support the presumption that social networks have an effect on entrepreneurial striving and success in the African context (Kristiansen, 2004). Kristiansen (2004) further suggests that, in the African context, specific qualities of social networks have impacts on individuals' ability to raise resources necessary for entrepreneurial striving and success. In addition, he suggests that the ability to operate social networks depends on a wider set of social capital and sub-cultural characteristics (Kristiansen, 2004).

The above empirical studies suggest that social capital and its different network forms do have positive impacts on various businesses activities and overall firm performance. It can be seen in the following literature that social capital is specifically critical to small firm start-up success.

Social capital and small firm start-up success

There are four reasons identified by Lin (1999) that can explain why embedded resources in social networks enhance small business start-up performance. First, social capital facilitates the flow of information, which is important to resource-limited, small start-up firms. Second, social capital may exert influence on the agents or others who play a critical role in decisions. Third, social capital gives certification of the individual's social credentials because of the resources or reputation owned by the ties behind the individuals. In such a case, the barrier of firm newness can be lowered. Fourth, social relations can re-enforce identity and

recognition including providing emotional support and public acknowledgement of one's claim to certain resources.

According to Nahapiet and Ghoshal (1998), social capital with high trust can diminish the probability of opportunism and reduce the need for a costly monitoring process and, thus, reduce transaction costs. Liao and Welsch (2005) suggest that a high level of social capital built on a favorable reputation, relevant previous experience, and direct personal contact often assists entrepreneurs in gaining access to venture capitalists, key competitors, potential customers and others. Fukuyama (1995) also suggests high social capital provides entrepreneurs with enhanced access to information and increased cooperation and trust from others. As pointed out by Bamford *et al.* (2006), more developed social capital leads to enhanced performance of new ventures as a result of the resource-based and market legitimacy advantages that accrue to the business. Thus, social capital theory provides a theoretical base to explain (Brüderl & Preisendörfer, 1998; Burt, 1997; Chung *et al.*, 2000; Dasgupta, 2005; Moran, 2005) why certain network structures or network ties can contribute to start-up business success.

Apart from the theoretical base, there are also empirical studies supporting social theory for start-up business. For instance, in a study of the entrepreneurial process of German business founders, Brüderl and Preisendörfer (1998) identified two parts in the entrepreneurial process of new business start-ups, the 'founding process' and the 'process after founding'. They use the term 'network founding hypothesis' to label the hypothesis that social network stimulates entrepreneurship, i.e. initiates the start-up of a new business. They call the hypothesis for the processes after founding as 'network success hypothesis', which postulates a connection

between network structure or network support and the new business performance. Both hypotheses suggest that network resources, networking activities and network support are heavily used in setting up new firms (Brüderl & Preisendörfer, 1998). Their empirical test based on 1,700 new business ventures in Upper Bavaria (Germany) supports their network success hypothesis, i.e. the support from personal networks increases the probability of success of newly founded business. Their results also suggest a positive relationship between the networking activities of founders and their new start-up's success (Brüderl & Preisendörfer, 1998).

Bamford *et al.* (2006) studied the impact of losing social capital due to founders' exit from new ventures. Their study is based on an assumption that founders can provide the key sources of social capital to the firm; and that the relationships and connections of the founders in new business start-ups are seen as critical to help create and support organizational routines equivalent to mature businesses (Bamford *et al.*, 2006). They analyzed the performance of the CEOs and the top management teams of nearly 800 new banks formed between 1996 and 2000 in the Sheshunoff Bank search database. Their finding suggests that the loss of social capital does have an impact on the business of new firms, and that the impact is effectively moderated with the addition of individuals in the top management team. Their empirical results confirm the social capital theory, which suggests that the loss of social capital would have a negative impact on the firm (Bamford *et al.*, 2006). They also find that as the number of individuals increases in the top management team, the ability of the new venture to improve its performance also increases. They, therefore, suggest entrepreneurs and entrepreneurial firms actively seek out ways to mitigate the potential loss of social capital because social capital gained through connections and relationships with others is potentially important in the success of

the firm (Bamford *et al* 2006). Their results also support their assumption that visible relationships and connections of the founder form the basis of the new venture (Bamford *et al.*, 2006).

Shane and Stuart (2002), using data on the life histories of 134 firms founded to exploit MIT-assigned inventions during the 1980–1996 period, analyzed how founders' social capital endowments affect the likelihood of critical performance outcomes of start-up firms. They find that entrepreneurs who possess high social capital (large social network, personal ties, referrals) are more likely to receive funds from venture capitalists than those whose social capital is low (Shane & Stuart, 2002).

So far, the literature review of social capital has not touched upon social capital in different cultural environments. The next section reviews the literature on social capital in a Chinese cultural context.

2.3.5 Culture-specific social capital – *Chinese* guanxi

Guanxi (the Chinese social network)

There are studies (Reynolds *et al.*, 1999; Reynolds *et al.*, 2000) that show the country-specific characteristics in explaining the amount and the type of entrepreneurial activity that affect the venture start-up process (Lee & Osteryoung, 2001; Steensma *et al.*, 2000). In a study of national differences in entrepreneurial networking, Dodd and Parta (2002) demonstrated that Greek culture is significant, in comparison with another seven different countries, in shaping the nature of

entrepreneurial networks. The results of their study suggest that a national difference does exist and that culture does matter (Dodd & Parta, 2002:131). In Chinese communities, the social relationship is called *guanxi* (Wu, 2000). *Guanxi* can be seen as the Chinese version of social relations (Lin, 2001a, b; Tsui *et al.*, 2000) and it can also be regarded as Chinese social capital (Luo & Chen, 1997; Wu, 2008). The Chinese social relations or social ties embody both the traditional culture and a conscious choice on the part of the individual (Park & Luo, 2001). Zhou *et al.* (2005) regard *guanxi* as a form of relationship exchange that reflects a system of reciprocity, trust and interdependencies that creates value through the effective use of social capital.

The Chinese word *guanxi*, when used as a noun, literally denotes a state in which entities are connected (Chen & Chen, 2004). In Chen and Chen's (2004) view, *guanxi* in human relations refers to either the state of two or more parties being connected or the connected parties themselves. According to Chen and Chen (2004), *guanxi* is more than a relationship as it involves social exchange with sentiment and emotions, and is marked by a mutual belief of reciprocity.

The origin of *guanxi* can be traced back to an ancient Confucian fundamental assumption of humankind which suggests that individuals exist in relation to one another (Chen & Chen, 2004). Confucius identified five key relationships of man in ancient society: emperor and subject; father and son; husband and wife; elder brother to younger brother; and friend to friend (Fung, 1948). Traditional Chinese social order lies in the order of hierarchical differentiation of individuals, the differentiated order (Li, 2000). Chen and Chen (2004) describe members in the ancient hierarchical differentiated relationships as enjoying unequal

rights and obligations so that sovereign, father, husband, elder brother and the senior

friend have more prerogatives and authority than the subject, son, wife, younger

brother and the junior friend. As such, in ancient Chinese society, the rights and

obligations of individuals depend on the individual's relative position in a network

relationship (Mote, 1989). This Confucian hierarchical cultural order is reflected in

guanxi to such an extent that a respected person, usually elderly and with a good

reputation, can ask favors of other lower hierarchical individuals (Wu, 2000).

According to Wu (2000), the creation and development of the Chinese business

network today is still closely related to the Chinese cultural value of 'face' (*mian-zi*)

with respect to an individual's social position.

Guanxi *concept and definitions*

The term *guanxi* has been increasingly accepted as a valid analytical concept of a

Chinese particularistic relationship (Li, 2000). *Guanxi* denotes a certain personal

connection and relationship based on sentiments and emotion (Chan, 2000). Luo

(1997) associates *guanxi* with the concept of drawing on connections or networks to

secure favors in personal or business relations.   Family and kinship ties are generally

seen by some researchers (Li, 2000; Yang, 2001) as important components in

forming *guanxi*. Chen and Chen (2002), however, do not see *guanxi* as familialism

or paternalism. They see *guanxi* as unwritten codes of conduct to guard against

opportunistic behavior of network members.

Chen and Chen (2004) conceptualize *guanxi* in terms of its bases,

functional components and the state. Chen and Chen (2002) consider *guanxi* as an

indigenous Chinese construct. It is indigenous because it possesses some key aspects

of Chinese values. Wu (2002) also suggests that *guanxi* is influenced by Chinese cultural values such as trust, 'face', reciprocity, respect for age and authority, and harmony and time. Tsui and Farh (1997) see *guanxi* as the existence of direct particularistic ties between two or more individuals (Tsui and Farh, 1997:56). Su et al (2007) treat *guanxi* as a network or resource comprising coalition-based stakeholders sharing resources for survival; and see it as playing a key role in achieving business success in China (Su *et al.*,2007:301). They analyze the concept of effective *guanxi* from the literature and suggest that effective *guanxi* has these characteristics: trust–commitment relationships; a power-dependence relationship; dynamic; not comparable to bribery; and a resource coalition in Chinese business communities.

Chen and Chen (2004) define *guanxi* as "*an informal, particularistic personal connection between two individuals who are bounded by an implicit psychological contract to follow the social norm of guanxi such as maintaining a long-term relationship, mutual commitment, loyalty, and obligation*" (Chen & Chen, 2004:306). This definition views *guanxi* from the perspective of two persons, i.e. from a dyadic angle. They argue that the fundamental unit of Chinese *guanxi* is the dyad rather than the group because *guanxi* stresses mutuality without group connotation; and that it is a personal rather than a group commitment that is the driving force of Chinese *guanxi* (Chen & Chen, 2004:309). Interpersonal *guanxi* is considered to be the fundamental units of the *guanxi* network (*guanxi wan*) in which a group of people is connected by personally defined reciprocal bonds or particularistic interpersonal ties. Wu views *guanxi* from a dyadic relationship perspective. According to Wu, *guanxi* contains three key elements*: "indirect relationship between two people through* [*a*] *proper introduction by a third party,*

direct relationship between people who have trusted each other, and contact person"
(Wu, 2000:38).

The *guanxi* network *(guanxi wan)*

Guanxi network refers to a social relationship with more than two persons (Wu &
Choi, 2004). *Guanxi* networks are often characterized by informal interpersonal
connections that are influenced by hierarchical Chinese cultural values and bonded
with reciprocal expectations (Peng & Luo, 2000). Wu (2000) broadly defined the
Chinese social network as: *"a web of social relationships established within the
sphere of core family members, extended family, friends, classmates, fellow
townsmen"* (Wu, 2000:38*).*

Park and Luo (2001) argue that Chinese society has been functioning as a clan-like
network with codified society rules since Confucian times. Thus, the Chinese depict
guanxi as operating with close family members at the core and, according to the
degree of trust and distance of relations, their distant relatives, classmates, friends,
and acquaintance are at the outer periphery (Park & Luo, 2001). In contrast, Bian
(1994) considers colleagueship, friendship, acquaintanceship, or other social
attributes to be able to become extensions of family relations in the development of
guanxi (Bian, 1994).

Park and Luo (2001) suggest the *guanxi* network has four types of
characteristics: transferable, reciprocal, intangible and utilitarian. *Guanxi* is
transferable because it can transfer favor among parties through a common
connection. Return favor is expected in a *guanxi* network, but the weaker party may

not return an equal level of reciprocal obligation to a higher rank party (Park & Luo, 2001). *Guanxi* is viewed as intangible because its members are tied together through an invisible and unwritten code of equity and reciprocity. It is viewed as utilitarian because *guanxi* is based entirely on exchange of favor rather than on emotion (Park & Luo, 2001).

Wu (2000) views the Chinese *guanxi* network as being obsessed with trust because Chinese people do not trust outsiders. Accordingly, the *guanxi* network usually consists of family, relatives, friends, classmates or colleagues with whom trust can be readily established, reciprocated and developed (Wu, 2000; Park & Luo 2001). Wu (2000) considers reciprocity to be one of the forms of hostage which is to sustain a *guanxi* network. In line with Wu (2000), Park and Luo (2001) also point out that if one disregards the reciprocal obligations, one will 'lose face', hurt related parties' feelings and eventually jeopardize the *guanxi* network. In Wu's (2000) view, harmony is a necessary prerequisite for *guanxi* to be established. Wu argues that without harmonious relationships, trust cannot be established, 'face' cannot be saved and reciprocity will not continue, and there will be no *guanxi*.

Guanxi in business

Su *et al.* (2007) treat *guanxi* as inherent in Chinese people's work ethic and, in their view, can be conceived as a Chinese way of doing business. They suggest that effective *guanxi* in business would have three characteristics. First, *guanxi* coalition is a longer-term cooperative business relationship. Second, *guanxi* is a coalition of resources and its composition is a network of cooperative business relationships via the means of a large web of *renquing* (exchange of favors) and *mian-zi* ('saved face'

for help when in need). Third, *guanxi* is a coalition of resources by nature of it being

a hierarchy of cooperative business relationships (Su *et al.*, 2007:304). In their view,

effective *guanxi* produces resource coalitions that can negotiate the external

resources necessary for competitive advantage-based survival.

According to Li (2000), *guanxi* provides instrumental value to Chinese

entrepreneurs in expanding their business activities (Li, 2000). Tsang (1998) shows

guanxi has the resource-based characteristics of economic value, rareness and non-

imitable; and, accordingly, that having a good *guanxi* network creates competitive

advantages, enabling firms to be successful in Chinese societies (Tsang, 1998).   Park

and Luo (2000) see *guanxi* as a mechanism for Chinese firms to exploit and

accumulate social capital. In line with the prediction of social capital theory,

empirical studies show that the Chinese inter-personal network, the *guanxi* network,

has significant impact on business performance.   For instance, Yeung and Tung

(1996) interview the heads of 19 companies and find *guanxi* affects a firm's financial

performance. They also find that the extent of *guanxi* network impact on a firm

depends on the right type of *guanxi,* the strength of *guanxi*, and the size and history

of the firm (Yeung & Tung, 1996). From a survey of 128 firms in central China,

Park and Luo (2000) find that *guanxi* leads to higher firm performance, but the effect

is limited to increased sales growth, and it has little impact on profit growth. They

conclude that *guanxi* benefits market expansion and competitive positioning of firms,

but it does not enhance internal operations (Park & Luo, 2001).

In a study of 156 foreign-invested firms and 48 Chinese domestic firms in

Jiangsu province in China, Luo and Chen (1997) find that *guanxi*-based business

activities such as sales and marketing and credit control have a systematic and

positive effect on profitability, asset turnover and domestic sales growth of both Chinese domestic firms and foreign-invested enterprises. They conclude that *guanxi*-based business activities have a profound and positive impact on firm efficiency and growth (Luo & Chen, 1997).

Based on a survey data of 150 Hong Kong Chinese executives with experience in Chinese business practices, Davies *et al.* (1995) find *guanxi* can help to smooth the running of routine and frequent business transactions in China, the securing of information about Chinese government policies, and the securing of Chinese government administrative approvals (Davies *et al.*, 1995).

Xin and Pearce (1996) suggest that firms lacking marketing experience, distinctive competencies or distribution channels, need to cultivate *guanxi* to compensate for their deficiencies (Xin & Pearce, 1996). In Xin and Pearce's (1996) view, resource deficiencies can be offset by external *guanxi*. Similarly, Tsang (1998) treats *guanxi* as a crucial company resource, which is particularly significant to those resource-short, small start-up firms.

Su *et al.* (2007) see that not all *guanxi* relationships are necessary and that among the necessary *guanxi* participants, not all are equally important to business. They suggest the effect of *guanxi* in Chinese business communities is to invoke coalitions of resources in which business parties pool their resources to enhance business performance.   They see that *guanxi* enables the sharing of scarce resources in Chinese business communities, which otherwise would not be available, through exchange and cooperation (Su *et al.*, 2007).

2.5 Entrepreneurship and entrepreneurial networking

Entrepreneurship is widely recognized as one of the key factors in the business performance of small businesses and new start-up ventures (Bager, 2003; Busenitz *et al.*, 2000; Herron & Sapienza, 1992; Naffziger *et al.*, 1994). According to Thornton (1999), entrepreneurs including their personality characteristics, values and beliefs, skills, experience, education, and decision-making behavior have been the focus of research in the start-up of new business.

Entrepreneurial theory of start-up success suggests that the success of a business start-up is determined by the entrepreneurship of the founder (Chrisman *et al.*, 1998; Herron & Sapienza, 1992; Lussier, 1996; Shaver & Scott, 1991; VanderWerf, 1993). As pointed out by Thornton (1999), entrepreneurship research has been covering a diverse interdisciplinary field of studies. In general, people refer to the process of firms being successfully created as entrepreneurship, even though the exercise of entrepreneurial behavior within organizational settings may be mainly for achieving organizational goals that do not involve a new business creation (Ulhoi, 2005). For instance, Jarillo (1989) views entrepreneurs as those who pursue opportunities to generate outstanding growth, which is not necessarily limited to new venture creation. The term entrepreneurship for the purposes of this paper, however, is limited to the small new venture creation.

According to Ulhoi (2005), entrepreneurial theory on the success of a new venture has several approaches ranging from the personal-traits approach to the integrating sociology and economics and ecological approach. The latter focuses on how external and structural (social, economic or political) influences impact on the

creation, selection and survival of new ventures. This integration approach, as

pointed out by Ulhoi (2005), is based on aggregation events at the population level of

analysis. Hitt and Ireland (2000) also find that the entrepreneurship literature covers

several fields, including sociology, economics and psychology (Hitt & Ireland, 2000).

2.5.1 Entrepreneurship

Shane and Venkataraman (2000) propose a conceptual framework of

entrepreneurship. They suggest that entrepreneurship involves the study of (a) the

sources of opportunities; (b) the processes of discovery; (c) evaluation and taking

advantage of the opportunities; and (d) the group of individuals who discover,

evaluate and exploit these opportunities. The emergence of entrepreneurship

requires the presence of both opportunities and enterprising individuals who wish to

take advantage of the opportunities. As Venkataraman (1997) points out,

entrepreneurship is determined by the combination of characteristics of the

opportunity and the nature of the individual. Based on Shane and Venkataraman's

(2000) framework, entrepreneurial opportunities should possess a value large enough

to offset the cost for the entrepreneur to exploit them. In Burt's (1997) structural

hole perspective, network ties are able to provide these entrepreneurial opportunities.

These opportunities can be in the form of products and services in young technology

firms (Romijn & Albu, 2002); industrial competition (Shankar & Bayus, 2003); low

cost of capital or financial support (Smilor, 1987); or business profit margin (Park &

Luo, 2001). Shane and Venkataraman (2000) suggest that the choice of exploitation

of these opportunities depends on three aspects: the nature of the industrial

organization (financing, first-mover advantages, low barriers to entry); the

opportunity (uncertainty prevails); and the appropriate-ability regime (property and patent laws).

<u>Supply-side of entrepreneurship</u>

Thornton (1999) classifies the entrepreneurship literature into perspectives of supply-side and demand-side. Supply-side refers to the availability of suitable individuals. Researchers of supply-side mainly focus on the entrepreneurs themselves. Demand-side refers to the needs of the number of entrepreneurial roles to be filled in a specific business environment (Thornton, 1999).   For the purpose of this paper, the literature review is limited to the supply-side literature.

From Thornton's (1999) supply-side perspective, the differentiation of one entrepreneur from another is mostly due to the difference in the individual's psychological, social, cultural and ethnic characteristics. The supporter of this perspective believes that the psychological traits and backgrounds of individuals differentiate them from the others (Naffziger *et al.*, 1994). Thus, scholars (Brockhaus & Pamela, 1986; Miner, 1997) have been trying to identify and characterize a variety of personal attributes that relate to successful entrepreneurs, especially the entrepreneurial psychological aspects. For example, Caird's (1993) study is focused on entrepreneurs' psychology tests (Caird, 1993). Herron and Sapienza (1992) try to explore the interaction between values or traits and business context.   Lam (1999) attempts to portray a successful entrepreneur in terms of their psychological perspective (Lam, 1999).   Reynolds (1991) analyzes the societal characteristics of entrepreneurs (Reynolds, 1991). Shaver and Scott (1991) examine the possibility that relatively enduring attributes of the person might affect entrepreneurial activity (Shaver & Scott, 1991).   Lee and Tsang (2001) investigate

the effects of entrepreneurial personality traits, background and networking activities on venture growth among 168 Chinese entrepreneurs in small and medium-size businesses in Singapore, and find that an internal locus of control and need for achievement have a positive impact on venture growth.

Entrepreneurship more than entrepreneur traits

Although the owner-managers' or entrepreneurs' traits are certainly key factors for the understanding of how and why new organizations are established, the traits factor alone is found to be inadequate in explaining the phenomenon of entrepreneurship (Thornton, 1999). As Ulhoi (2005) indicates, entrepreneurship cannot merely be understood in terms of personality characteristics alone or in sterile economic terms. Brüderl and Preisendörfer (1998) also argue that entrepreneurship is not to be viewed as the role of isolated and autonomous decision-makers, but of actors involved in a social pursuit, embedded in a social, political and cultural context. Johannisson (2002) suggests that the entrepreneur creates a potential for growth by synergistically combining his or her team's internal resources as well as complementary external network resources.

Henon and Sapienza (1992) suggest that entrepreneurial behavior is driven by context, values and training rather than the birth of an entrepreneurial type, and that entrepreneur skills outweigh entrepreneur traits. Although skills are partly dependent upon individual aptitudes, they are also subject to training and experience (Herron & Sapienza, 1992). In the scope of this paper, two kinds of skills are identified as important for entrepreneurs in starting up a new business: the resource management skills and networking skills. Resource management skill is important

because a new venture is a business entity, which is to be run by owner-managers whose resource skills level can determine the survival or success of the new firm in a competitive business environment (Chandler & Hanks, 1994). Networking skill is important because it is used to interact with personal networks, and the personal networks of new business founders can be treated as resources to enable the success of the new start-up business (Ostgaard & Birley, 1996; Ulhoi, 2005; Westlund & Bolton, 2003; Witt, 2004). As Reynolds (1991) stresses, a social network is an important prerequisite for starting up a successful new venture (Reynolds, 1991). Further, Dubini and Aldrick (1991) treat entrepreneurship as 'inherently a networking activity' and networking activity is central to the entrepreneurial process (Dubini & Aldrick, 1991:306).

2.5.2 Entrepreneurial networking and start-up success

Jarillo (1989) suggests that networking is a system by which entrepreneurs tap into resources that are external to them (Jarillo, 1989:133). In Jarillo's (1989) view, networking is the mechanism used by entrepreneurs to attain their goals. Burt (1997) goes further to claim that entrepreneurs are people skilled in building the interpersonal bridges (Burt, 1997: 342).

Johannission (2000) identifies three aspects of the entrepreneur's personal networking: amplifying commitment, resourcing and re-orientating (Johannisson, 2000:372). For 'amplifying commitment', Johannisson (2000) sees the need for the entrepreneur to confirm his own identity and enforce his self-confidence through networking. Through networking, the new firm is invited into trust-building relationships as well as builds its legitimacy (Johannisson, 2000).

O'Donnell (2004) captures the nature of entrepreneurial networking in three dimensions: the level of networking, the networking pro-activity and the strength of network ties. He conducted a longitudinal nine-month qualitative in-depth interview research project on how networking contributes to small firm marketing in seven cases. His result suggests that owner-managers generally engage in networking, and the level of networking can be described as extensive; and the networking activities, as proactive (O'Donnell, 2004). Such networking activities also lead to the development of strong links between the owner-manager and his/her network ties. Nevertheless, in certain cases, O'Donnell (2004) finds extensive networking is neither necessary nor desirable, and it is not always preferable to develop strong ties with all network actors. O'Donnell's (2004) result further suggests that networking is an activity that owner-managers use to shape and to suit their circumstances and the needs of their firms. This is consistent with Burt's (1997) contingency value of network relations.

Johannisson (2000) views entrepreneur networking as being driven by opportunity, and personal networks as being deliberately constructed by the entrepreneur when his or her new business starts up. He considers personal ties in entrepreneurial networks originate both from the entrepreneur's random encounters and deliberate research (Johannisson, 2000:371). Deliberate research is a purposeful activity. Larson and Starr (1993) suggest the purposeful activities of the owner-managers and the network participants combined with the actual exchange processes constitute the process of a new organization formation. The suggestion that entrepreneurial networking is a purposeful activity is supported by Brown and Butler's (1995) finding in analyzing the entrepreneur's competitor networks. They

find entrepreneur firms that invest in competitor networks have higher growth of sales. Further, in the data of a nation-wide investigation into the nature and causes of small professional business service firm growth in Britain that was undertaken in 1991, Bryson *et al.* (1997) find small firm success is enhanced by informal networking and collaboration.

Donckels and Lambrecht (1997) analyzed a survey of 900 entrepreneurs from three different Flemish regions in Belgium. Their empirical findings indicate that highly trained entrepreneurs have a wide network position, both national and international entrepreneur contacts, and that the presence of growth-oriented businesses in different kinds of networks suggests the importance of forming networks for small business. Brüderl and Preisendörfer (1998), however, find that there are studies suggesting that entrepreneurial networking activities and network support may not be beneficial to newly established businesses, and they suggest two reasons to account for the contradictory findings. The first is the differences in operationalization, and the second is 'compensation hypothesis' (Brüderl & Preisendörfer, 1998). Brüderl and Preisendörfer's (1998) 'network compensation hypothesis' suggests that founders endowed with lower stocks of human capital will try harder to mobilize social support from their social network (Brüderl & Preisendörfer, 1998: 224). Nevertheless, their research result on this hypothesis was not conclusive (Brüderl & Preisendörfer, 1998).

In Liao and Welsch's (2005) view, the creation of new ventures and their success depend on the entrepreneur's ability to establish network relationships. Littuen (2000) also has a similar view that the success of a firm will depend on the entrepreneur's ability to use networks as part of his or her management capabilities

(Littuen, 2000:62).   These views are shared by Burt *et al.* (1998) who suggest that network structures present opportunities, but opportunities do not by themselves turn into performance because some owner-managers are not comfortable pursuing information and control benefits from the network (Burt *et al.*, 1998). Burt *et al.* (1998) further suggest that individuals who are more comfortable in, and have a propensity for, bridging structural holes may be more successful at identifying new opportunities by generating flows of unique information through their networking and other information-gathering behavior. They also think such individuals may be more successful in attracting human and capital resources for their firm start-up, and they propose an entrepreneur personality index to measure the probability of an entrepreneur having an entrepreneurial network (Burt *et al.*, 1998). This raises the topic of the social competence and capability of entrepreneurs to deal with network resources.

2.5.3 *Entrepreneur's competence in networking*

According to Ulhoi (2005), a network carries a generic sense-making process that guides the owner-manager as a business person and private person, and that network is perceived as a tool for realizing the venture. Bourdieu (1986) asks entrepreneurs to do deliberate investment in both economic and cultural resources to acquire social capital. Littunen (2000) includes networking in the management capabilities of new entrepreneurs because networks are important resources that ensure a firm meets the expectation of its interest group, and ensure survival (Littunen, 2000). All these suggestions are, to some extent, evidenced by Pena's (2002) results of the analysis of 114 start-up firms from 364 start-up projects. Pena (2002) finds that the development of entrepreneurs' business networks and an immediate access to critical

economic agents such as suppliers, customers, financial institutions, consultants and local regulators facilitates the passage of new start-up firms through the difficulty of the gestation period. Pena (2002) thus suggests that the ability of entrepreneurs to establish and benefit from business networks is an important intangible asset that entrepreneurs must take into account during the gestation period of firms. He adds that effective interaction with all economic agents during the initial years of business activities is an important relational capital element to explain new-business success.

From the perspective of using network resources in small business start-ups, social competence and resource management competence are important entrepreneurial attributes. Some relevant literature reviews are as follows.

Social competence

Bosma *et al.* (2004) find that founders with high social skills can derive more benefits from their network of stronger or weaker ties with all the stakeholders including clients, investors, debtors and subcontractors; the benefits of social skills to the founder are high (Bosma *et al.*, 2004). West III (2003) suggests that behavior within entrepreneurial networks may affect the extent to which new opportunities are first identified by entrepreneurs and then successfully pursued. In the situation of an innovating entrepreneur, West III (2003) sees the networking efforts of the entrepreneur serve not only to source new information and identify possible opportunities, but also to coalesce other interested parties in justified true belief around asymmetric knowledge about an opportunity.

Entrepreneur interactions with his/her social networks are subject to social perception, norms, structures, trust and position in the social networks (Ulhoi, 2005).

In Johannisson's (2000) view, an entrepreneurial network reflects the entrepreneur's personality. An extroverted personality is found to have a positive impact on networking activities (Lee & Tsang, 2001). As Ulhoi (2005) points out, the reliability of information obtained through a network requires the element of mutual trust. Portes (1988) points out that the guarantee repayment and group approval are commonly mixed effects of enforceable trust. The trust level is found to be enhanced if the entrepreneur is high in social competence (Baron & Markman, 2003). As Baron and Markman (2003) point out, the social competence of the entrepreneur plays an important role in the success of the new venture.

Competence in managing resources

Larson and Starr (1993) suggest that entrepreneurial networking processes rely on the ability of the owner-manager to explore, screen and make selective use of networks to match the needs of the start-up firm. Only if the entrepreneurs make use of the networks, can the networks improve success (Brüderl & Preisendörfer, 1998). This view is shared by Ulhoi (2005), who considers the challenge to the entrepreneur is his or her ability to manage their personal network in an environment of simultaneous trust and distrust (Ulhoi, 2005:944). According to Ulhoi (2005), owner-managers need to adopt a multifaceted understanding which allows for coupling their own short-term and narrow, self-utility-driven interests with long-term collective-driven interests; with the aim of developing a collective trust similar to other important intangible collective assets such as knowledge and learning (Ulhoi, 2005:944).

External networks, as discussed in the previous review, are resources of firms but the resources require that entrepreneurs have the ability to manage them,

'resourcing' them. Johnnission (2000) uses the word 'resourcing' to refer to the network control over resources of other economic actors. Jarillo (1989) simply treats networking as the ability to systematically use external resources. As suggested by Chander and Hanks (1994), the ability of entrepreneurs to mobilize resources such as organizing resources and coordinating tasks and people are critical managerial competencies of entrepreneurs. These competencies are likely to moderate the impact of the resources on the firm performance.

2.6 Summary and conclusion

A great variety of network theories has been evolving throughout the historical development of network theory. These include Granovetter's (1977) strength of weak ties theory; Lin *et al.*'s (1981) social resource theory; Granovetter's (1985) socially embedded economics theory; the Swedish school's customer–supplier relationship theory (Billi, 1992); innovation network theory (Scott, 1991; Stopper, 1993); location network theory (Stopper, 1993); exchange theory (Ho, 2006); network exchange theory (Lucas *et al.*, 2001); status characteristic theory (Willer et at, 2000); network governance theory (Jones *et al.*, 1997); relational cohesion theory (Lawler & Yoon, 1998); network evolution theory (Hite, 2005); and social capital theory with variations in social bonding theories (Coleman, 1988) and bridging theories (Burt, 1992). Among these theories, social capital theory, which proposes that a social network provides value to its members by allowing the members to access resources embedded within the social network relationship (Bourdier, 1986), is found to be the most relevant and applicable to the small business start-up situation.

The literature review on social capital indicates there are many definitions of the term 'social capital'. Some of the literature suggests social capital to be a potential resource linked to the possession of a network (Bourdieu, 1986); while others see social capital as goodwill available to individuals or groups (Adler & Kwon, 2002); and still others refer to social capital as the resources made available to a group through a group member's social relationships (Oh *et al.*, 2006). Although there is a great variety of social capital definitions, there seems to be no argument against the view that social capital is about the value of relationships (Borgattie & Foster, 2002), and about the potential resources embedded in the social relations (Lin *et al.* 1999).

The attributes of social capital are multifaceted. Some researchers consider social capital to be equivalent to physical capital (Adler & Kwon, 2002), whereas others have reservations in using the terminology of 'capital' for social capital (Arrow, 2000; Solow, 2000). Some researchers treat social capital as networking capital (Anderson and Jack, 2002), while others express social capital in terms of benefits including information benefits (Anderson & Jack, 2002), business referral benefits (Burt, 1997) and economic assets (Dasgupta, 2005). Social capital is found to exist in many different forms including trust (Carpenter *et al.*,1998), and information and norms (Coleman, 1988); and in different dimensions such as structural, relational and cognitive (Nahapiet & Ghoshal, 1998).

There are controversial opinions among researchers on the advantages of bonding social capital (Coleman, 1998) versus bridging social capital (Burt, 1992) with regard to which one is better. The general view seems to hold that both types of social capital are important, and that the benefit of social capital depends on the

situation to which social capital is applied (Sobel, 2002; Lechner & Dowling, 2003; Uzzi, 1997), and it is expected that both bonding and bridging social capital are important to the success of small business start-up.

The literature generally suggests positive associations between the relationship of social capital and small business performance (Lin, 1999; Honig, 1998; Kistensen, 2004; Moran, 2005). The literature on culture-specific social capital, the Chinese *guanxi*, also suggests similar positive associations of *guanxi* with small business performance in China in various business aspects such as facilitating marketing (Xin & Pearce, 1996); smoothing routine and frequent transactions (Davies *et al.*, 1995); and improving financial performance.

The last part of the literature review is focused on entrepreneurship in terms of networking. The literature suggests that the networking capabilities of entrepreneurs can influence entrepreneurs' ability to discover opportunities in their networks and their ability to mobilize available resources through their networks (Ulhoi, 2005; Larson & Star, 1993; Johannisson, 2000). The literature on entrepreneurial networking capabilities, including their social competence (Bosma *et al.* 2004) and competence in managing their network resources (Ulhoi, 2005), suggest these play an important role in the success of a small new business.

In conclusion, this chapter reviews the literature on major network theories with a particular focus on social capital theory and its related culture-specific form, the Chinese *guanxi*, and the entrepreneurial theory on networking; as well as these theories' respective positive associations with business performance. The success of starting up a small new business depends on many factors (Chrisman *et al.*, 1998;

Gadenne, 1998; Krueger, 1993; Lee & Osteryoung, 2001) and, among these factors, the availability of resources and the competence of entrepreneurs are considered to be critical (Davidsson & Henrekson, 2002; Hansen, 2001). A proposition can therefore be drawn as follows: new small businesses will rely on external social networks or social capital to gain resources to enable the success of their new businesses (Brüderl & Preisendörfer, 1998; Hansen, 2001). It is expected that both bonding and bridging social capital can provide positive contribution to the start-up success, and strong tie network may be a little more important at the very early stage.

Chapter 3   Conceptual model and research hypotheses

The purpose of this chapter is to construct conceptual models in which the availability and extraction of external network resources can lead to start-up success for small firms. This chapter proposes that certain forms or dimensions of social capital may enable small new firms to become successful. Two separate but related conceptual models are developed. The first conceptual model proposes a direct relationship between initial external networks and start-up success. The second model proposes an association of start-up success with interaction between an initial external network structure and the entrepreneur's networking capabilities. In the process of developing the conceptual models, a series of theoretically justified hypotheses are formulated.

3.1 External network (social capital) and start-up success

According to Brüderl and Preisendörfer (1998), three mechanisms are commonly identified by researchers to support the proposition that networks improve start-up success. First, social relations and social contacts are channels for gaining access to information. Second, network contacts give access to customers and suppliers. Third, network contacts open the possibility to broaden the financial basis of the new firm. Brüderl and Preisendörfer (1998) further suggest that a specific interpersonal tie, a family network, can enable access to unpaid work and provide emotional support.

Interpersonal ties and their embedded resources constitute the entrepreneur's social capital (Lee *et al.*, 2005). Social capital is found to be positively associated with entrepreneurial discovery of opportunity (Davidsson & Honig, 2003); gaining tangible and intangible resources (Wah *et al.*, 2007); reducing transaction cost (Putnam, 1993); receiving emotional support (Bosma *et al.*, 2004); enhancing explorative and exploitative learning (Zhao & Aram, 1995); increasing legitimacy (Lounsbury & Glynn, 2001); promoting information exchange and coordination (Ottesen *et al.*, 2004); and facilitating external knowledge acquisition (Yli-Renko *et al.*, 2001).

There are four major conceptual theories of social capital identified to be able to support the proposition that firm start-up success is associated with external networks. The first is Granovetter's (1973) strength of weak tie concept, according to which a network having many narrowly defined links is an advantage because, through the links, entrepreneurial opportunity information can be discovered. The second is Coleman's (1990) close bonding network, according to which a bonding network can provide social and emotional support to the entrepreneur (Mustakallio *et al.*, 2002). The third is Burt's (1992) structural holes effect, according to which it is advantageous for an entrepreneur to be linked to other individuals who are themselves unconnected. Entrepreneurs in such a position can have both information benefits and control benefits (Burt, 1992). The fourth is Lin's (1999) social resource theory, which suggests that advantages stem from the nature of the resources embedded in a network, and the entrepreneur can extract resource benefits directly from those ties.

With the support of network theories, especially social capital theory, the conceptual model developed in the next section is based on the premise that social capital is a form of capital (Adler & Kwon, 2002), which can be used by firms to produce valuable output (Blyler & Coff, 2003). Actors in a social network can extract benefits from the social capital (Davidsson & Honig, 2003; Portes, 1998). Thus, the basic premise of the conceptual model developed in the next section is that entrepreneurs of small start-up firms, due to a lack in physical and financial resources, are likely to make use of their external network or social capital at the time of founding so as to get the resources they need to launch a business (Jenssen & Agreve, 2002). The following figure 3.1 illustrates the basic premise of the conceptual model developed in the next section.

Figure 3.1 Base model of network start-up success (direct relationship model)
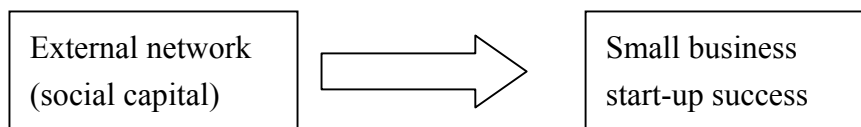
3.1.1 Strong tie (bonding tie) and start-up success

The network tie and its variety of forms are the structural dimension of social capital (Moran, 2005). From this structural perspective of social capital, two types of social capital are identified: the bonding social capital and the bridging social capital (Putnam, 2000). As Patulny and Svendson (2007) suggest, the bonding (Coleman, 1988) and bridging (Burt, 1992) forms of social capital are two major streams of social capital studies. Bonding social capital is generally expressed in terms of

strong ties, while bridging capital is usually referred to as weaker ties (Beugelsdijk & Smulders, 2002; Jenssen & Agreve, 2002; Patulny & Svendsen, 2007).

Strong ties reflect intense, emotion-laden and reciprocal relationships (BarNir & Smith, 2002). Through a strong ties relationship, a small start-up firm is able to mobilize various types of resources to the advantage of the firm to enable its start-up success. Jenssen and Greve (2002) identified three categories of network resources that can be obtained through networks: the financial resources, the information resources, and the affective resources. It is shown below that all three categories of resources can be obtained through a strong ties network to support business start-up.

Financial capital or its other form in terms of financial credit or a financial loan is a direct physical type of resource, which is difficult to get from financial institutions without some kind of security to back it up. It is not surprising that small start-up firms, because of the nature of smallness, do not have the security to obtain financial resources. Thus, if there is any financial support given to the entrepreneur without security, it is likely due to a situation that the finance provider knows the entrepreneur well, and that the finance supplier and the entrepreneur have a strong and special relationship such as some kind of kinship (brother or sister) or are very close friends. From such a perspective, financial support is more likely to be gained through a strong tie.

Information related to business activities such as supplier quality, prospective customer leads, expert advice or even credibility can be provided through strong tie as well as weak tie relations. Information in terms of tacit

knowledge-sharing and innovative idea-sharing, however, is more likely to be acquired through strong relations (Capaldo, 2007; Dyer & Nobeoka, 2000; Zhao & Aram, 1995). Strong ties are associated with the exchange of fine-grained information, tacit knowledge and resource cooptation (Krackhardt, 1992) through which a start-up firm can develop its competitive advantage.

Strong ties can be understood as intense relations (Lechner & Dowling, 2003), and it is, therefore, expected that strong ties involve a high degree of friendship. A high degree of friendship creates affection (Krackhardt, 1992) through which entrepreneurs can receive emotional and social support (Brüderl & Preisendörfer, 1998) to overcome various psychological hurdles (Brockhaus & Pamela, 1986) during the process of new business start-up. Emotional, social and motivational (Kadushin, 2002) support are found to have a significant impact on the entrepreneur's firm performance (Kristiansen, 2004). As Honig (1998) learns, from an empirical study of 125 micro-enterprises in Jamaica, frequent church attendance and marital status of the owner has a positive association with profitability of the start-up business.

3.1.2 Weak tie (bridging tie) and start-up success

According to Granovetter (1973), all bridges are weak ties and weak ties can offer access to diverse information, and facilitate communications; and therefore benefit the flow of information. For small firm start-up, knowledge acquisition is important for the growth and the development of the firm. According to Lechner and Dowling (2003), knowledge acquisition depends on weak ties.

In the small business start-up context, the information benefits are important. Information benefits may also include other aspects such as the direct accessibility of business opportunity information, the referrals or suggestions like an expert or technical advice that facilitate the actors to make the right decision (Constant *et al.*, 1996). Weak tie networks can serve as conduits of information about markets, products, innovations and resources (Davidsson & Henrekson, 2002). This business-related information is likely to reduce business risks and increase business opportunities leading to the success of the new firms. Weak tie networks facilitate communications (Levin & Cross, 2004) which, in turn, enables timeliness of information (Elfring & Hulsink, 2003). Timeliness of relevant information can enhance firm competitiveness (Burt, 2005). Referrals from network ties may increase new firms' credibility, which may offset some of the new firms' inherent liability of newness (Baum *et al.*, 2000) and increase the chance of firm success.

3.2 Concept model development

The previous section discussed the conceptual construct of social capital in terms of strong ties and weak tie networks in relation to start-up success. The following goes further to discuss the operationalization of social capital and to develop the building blocks, the independent variables, of the conceptual model.

3.2.1 Operationalization of social capital: towards a conceptual model

Even though an emerging consensus appears to be that social capital is comprised of networks, of norms of trust and of cooperation (Patulny & Svendsen, 2007; Putnam,

2000), the existing literature lacks widely accepted and consistent operationizations of social capital. For instance, Cooke (2007) suggests that social capital can be measured more in terms of number, intensity and contacts. Beugelsdijk and Smulders (2004) operationalize social capital in network participation, and they suggest the higher the level of participation in networks, the higher the social capital. In a study of small and medium-size enterprises in China, Wu and Leung (2005) operationalize social capital as network ties and trust.

Brüderl and Preisendörfer (1998) identify two strategies to operationalize social capital for start-up business. The first strategy is to accentuate the general characteristics (such as network size and network diversity) of the embedded personal network of the entrepreneur, and to explore the effects of these characteristics on business performance. The second strategy is to look at the activities carried out by entrepreneurs in the formation stage such as the number of people entrepreneurs have contacted, and to explore the effects on business performance.

It is found that many empirical researchers (Davidsson & Henrekson, 2002; Knack & Keefer, 1997) operationalize social capital in terms of network ties and network relations. The study of this paper follows the same approach: to operationalize social capital in the form of network ties and network relations. Four operationational variables are identified for this study: network size, network support, trust and network diversification. As discussed in the previous section, the association of strong ties with start-up success and the association of weak tie networks with start-up success stem from two different theoretical justifications. In the first conceptual model, other than network diversification which can be

measured without differentiating strong ties and weak tie networks, network size,
trust and support are measured within the category of strong tie and weak tie,
respectively. At this point of discussion, some details can be added to the previous
basic conceptual model, as follows:

Figure 3.2   Full model of external network start-up success (direct relationship)

Initial external network at founding

Size of strong tie network	H1
Usefulness of support from strong tie network	H1a
Trustworthy strong tie network	H1b
Size of weak tie network	H2
Usefulness of support from weak tie network	H2a
Trustworthy weak tie network	H2b
Network diversity	H3
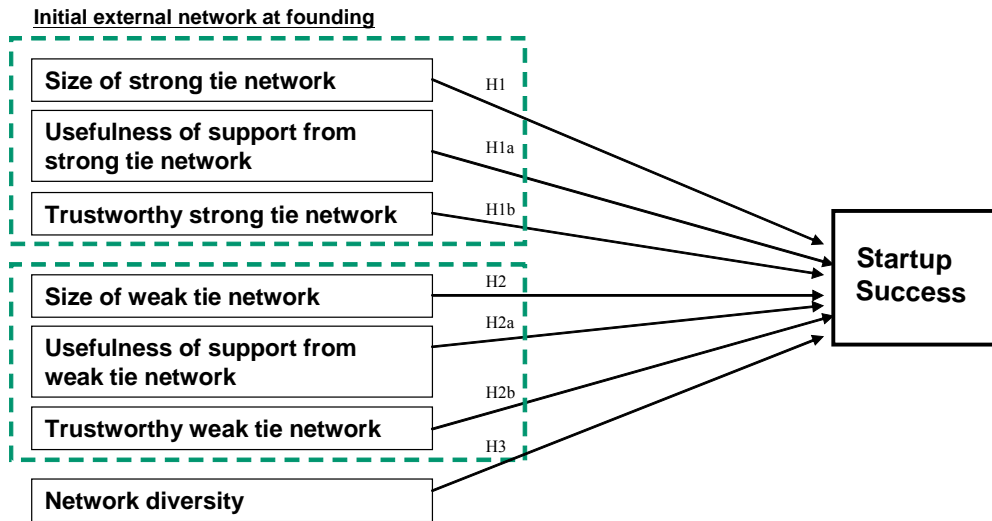
Startup Success

The justification for each independent hypothesis is discussed in the following
sections.

3.3 Hypotheses development

3.3.1 Network size and start-up success

Network size has been used as the primary measure in social capital studies (Boxman
et al., 1991). Many researchers, in both theoretical formulation and empirical
analyses, (Brüderl & Preisendörfer, 1998; Lee & Tsang, 2001; Ostgaard & Birley,
1996), use the number of social relational ties to represent the level of social capital
despite the fact that there are some varieties in the measured effect. Bourdieu (1985)

considers that the volume of social capital possessed by a given individual depends on the size of the network of connections that the individual can effectively mobilize as well as on the volume of capital (economic, cultural or symbolic) possessed by each of those with whom he or she is connected (Bourdie 1985: 249). For example, Burt (1992) finds that people with larger contact networks obtain higher paying positions than people with small networks (Burt, 1992).

From the resource perspective, external network ties or social capital are considered to be resources of entrepreneurial firms (Lechner & Dowling, 2003). Since social capital is embedded in the network relational ties (Anderson & Jack, 2002), the more the number of relations, the more embedded social capital to be expected; which, in turn, leads to more potential resources or benefits that a firm can access. The number of network ties is, therefore, directly related to the amount of available relational resources. The number of network ties represents the size of entrepreneurial networks.

The premise that network size is positively associated with start-up success is supported by the argument that the probability of obtaining a specific resource increases with the number of network contacts. Entrepreneurs with larger size networks is, therefore, expected to get more support and resources from the networks and, consequently, their start-up firm will be more successful (Brüderl & Preisendörfer, 1998). This argument is also supported by Hansen (1995), who discovers that the size of a network, especially the size of the subset of people who had been involved in supporting the entrepreneurs to start-up their firms, is positively associated with firm performance.

Lee and Tsang (2001) view the total number of ties as the total size of the network of the actor. Nevertheless, merely measuring the total number of ties connected to the actor does not give an appropriate picture of size (Hansen, 1995). Instead, Hansen (1995) suggests measuring the size of the subset of the total network of people, who are somehow involved with the entrepreneurs in founding the company. He labels this group of people as the entrepreneurial action sets. This action set concept is, to some extent, shared by Brüderl and Preisendörfer (1998) who suggest measuring network size by the number of people to whom the entrepreneurs have talked. Following this approach, the size of a network in this study is measured by the number of ties with which the entrepreneurs make contact, for whatever reasons related to their new business. In other words, it is the entrepreneurial action sets that are measured.

Hite and Heslerly (2001) point out that the network of new firms would change over time when the firms move into a different growth stage. This network change is due to the change of resource needs and challenges facing the company at various growth stages (Hite & Hesterly, 2001). Since the focus of this study is on the early stage of start-up, the initial network size of the entrepreneur is measured. It can be noted that the size of a firm's initial network is largely determined by the size of the network the entrepreneur brings into the company (Baum *et al.*, 2000; Lechner & Dowling, 2003; Zhao & Aram, 1995).

Network sizes of strong tie and weak tie at early stage and start-up success

Rather than measuring one single network size by counting the total number of ties of the entrepreneurs, this paper follows the approaches of Brüderl and Preisendörfer

(1996), Jenssen and Greve (2002) and Beugelsdijk and Smulders (2004) in treating strong tie network and weak tie network as two separate variables measurement. There are three reasons for separating strong tie and weak tie in network size measurement. First, the types of benefits from strong ties and weak ties as suggested by the literature are somewhat different (Anderson & Jack, 2002; Jenssen & Agreve, 2002; Patulny & Svendsen, 2007). Scholars disagree on which kind of network is the best (Moran, 2005); and there are arguments and studies supporting either side of the views (Patulny & Svendsen, 2007) or supporting both views. For instance, Hite and Hesterly (2001) suggest both cohesive and spare networks are conducive to emerging firm performance. Second, a strong tie is assumed to take a longer time and more frequent interaction to build and maintain (BarNir & Smith, 2002; Granovetter, 1973); it is therefore expected that the number of strong ties is less than the number of weak ties. By simply adding together the number of both strong ties and weak ties, one may obscure the effect of the variation of the outcome attributed to the variation of the smaller number type of ties. Third, Liao and Welsch's (2005) study suggests that it is the pattern associated with different dimensions of social capital that differentiates the entrepreneur from the general public rather than social capital itself. Separate measures can help to understand the extent of influence of each of these two different variables on the start-up[9].

Network size variables are therefore defined as such: the size of strong tie network is the number of strong ties with which the entrepreneur has made contact, for whatever reasons related to the small start-up business at the early stage of starting; the size of weak tie network is the number of weak ties with which the

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[9] It should be noted that entrepreneurs have only one network consisting of a mix of strong tie and weak ties. To the entrepreneurs, these two networks are not totally discrete. Separation of strong tie network and weak tie network is for the purpose of studying the effects on different networks.

entrepreneur has made contact, for whatever reasons related to the small start-up

business at the early stage of starting. The network size hypotheses are as follows:

H1:The initial size of strong tie network of the entrepreneur is positively associated

with the entrepreneur's small business start-up success.

H2: The initial size of weak tie network of the entrepreneur is positively associated

with the entrepreneur's small business start-up success.

3.3.2 Network support and start-up success

The benefits of network ties lie in the tie to resource-filled others (Borgatti & Foster,

2003), and it is these resource-filled others whose resources are beneficial. Thus, the

level of support from the resource-filled others of a network determines the amount

of benefits that can be derived from the network. Although support from a network

can be apparent in many different ways including access to opportunities and

emergent threats (Burt, 1992); pooled resources and cooperation from network

members (Uzzi, 1996); third-party endorsements or credentials to new prospects

(Lin, 1999); provision of information needed to be creative and innovative (Romijn

& Albu, 2002); and help to improve management performance (Moran, 2005), one

thing would not change: they all depend on the extent to which the tied resource-

filled owners are willing to provide support.

The implicit assumption of many network studies that a firm occupying an

advantageous network position can automatically benefit from that position (Burt,

1992; Zaheer, 2001) may not be realistic. For instance, if a contact has a significant

amount of resources but the contact is not willing to provide support, the value of the network can never be realized. Network ties merely provide the potential to access the resources of its contacts (Portes, 1998). Whether the entrepreneur can obtain the benefits, again this depends on the willingness of the resource-filled others to provide support.

Accordingly, getting support from a network is the essence of realizing the value of social capital. The measure or operationalization of social capital should incorporate the measure of the level of support. Brᴜderl and Preisendörfer (1999) indicate that the difference in operationalization of social capital may sometimes result in contradictory findings (Bates & Yoon, 1994), due to an invalid approach to operationalization. Brüderl and Preisendörfer (1999) therefore propose a strategy of directly measuring the support received from the social network as a means to investigate whether social support received from one's personal network increases the success of start-up firms. They directly measure the entrepreneur's perception of the intensity of support. Thus, this paper follows a similar approach and measures the usefulness of the support as perceived by the entrepreneur. The hypotheses are as follows:

H1a: The usefulness of initial strong tie network support as perceived by the entrepreneur is positively associated with the success of small start-up firms.

H2a: The usefulness of initial weak tie network support as perceived by the entrepreneur is positively associated with the success of small start-up firms.

3.3.3 *Trustworthy social network and start-up success*

Trust is the relational dimension of social capital (Moran, 2005). Without trust, there would be no social capital as there would be no goodwill (Adler & Kwon, 2002), nor would there be any sustainable relationship (Putnam, 2000). Through trustful relationships, the entrepreneur can reduce the probability of opportunism and the need for costly monitoring of business processes with business partners, and thus reduce transaction costs (Nahapist & Ghoshal , 1998). Trust saves time and money for entrepreneurs in getting relevant information, and enables them to make fast responses to market needs (Kingsley & Malecki, 2004). A trustworthy network of customers reduces the risk of accounts receivable (Luo & Chen, 1997). A trustworthy network of suppliers provides new start-up firms with quality supply. A trustworthy network of advisors enables a firm to make the right decision at the right time (Goel & Karri, 2006). Some empirical studies also find that trust between the entrepreneur and their business partners is critically important at the early stage of formation of a new company (Kohtamaki *et al.*, 2004). Entrepreneurs of small business need to trust others and serve as trustees in order to form and grow their new organizations (Goel & Karri, 2006).

As described in the literature review section, the Chinese social network is the *guanxi* network, which is embedded with Chinese cultural elements of reciprocity and trust. Trust is not only built-in *guanxi* but also highly emphasized. If there is no trust, there is no *guanxi* (Wu, 2000). In the Hong Kong business context, measuring the level of trust of entrepreneur's social network for start-up success is therefore particularly relevant.

When an entrepreneur considers whether the information provided by its contacts is trustworthy, it usually includes two aspects: benevolence-based trust and competence-based trust (Levin & Cross, 2004). Where benevolence-based trust has an affective component, which is associated with the reputation of the source. Competence-based trust has a cognitive component in that knowledge seekers trust a source's competence to make suggestions and influence. As Levin and Cross (2004) suggest, knowledge coming out of benevolence-based trust may create conditions for learning.

Since the level of trust, to a great extent, reflects the quality of the relationship of the entrepreneur, it is reasonable to expect that the higher is the trustworthiness of the entrepreneur's network, the better the quality (the amount of benefits) of the network resource; and thus, in turn, the better the chance of start-up firm success. Levin and Cross (2004) suggest that a high level of trust is usually associated with strong ties, but they also acknowledge that trust and strong ties are two distinct concepts. According to Sobel (2002), trust is the willingness to permit the network source to influence the entrepreneur's decision and welfare. Level of trust determines the degree to which entrepreneurs are willing to rely on the advice and information of others (Sobel, 2002).

For the purpose of the study, the trustworthiness of entrepreneurial network is defined as the trustworthiness of the information and advice obtained from the external network source. It refers to the entrepreneur's degree of confidence in trusting the information and advice provided by their network. The higher the confidence, the better are the chances of the resources being applied to the business. Thus, two hypotheses are established:

H1b: The level of trust that the entrepreneur has in his/her strong tie network is positively associated with the success of small business start-up.

H2b: The level of trust that the entrepreneur has in his/her weak tie network is positively associated with the success of small business start-up.

3.3.4 Network diversity and start-up success

Different types of relationships included in the social network can create variety and complementary ties represent a high variety of resources. The more diverse is the network, the higher the chance to pick up new ideas and information of value; and thus, in turn, increase creativity and learning (Reagans & Zuckerman, 2001), resulting in better firm performance. Thus, diversity is important because it provides access to new information from various sources.

Diversity amongst contacts is useful in the implementation of new ideas, particularly when the tasks involved are multifaceted or complex (Burt, 1992:23). As information transfer is a key benefit of network membership, diversified networks can provide entrepreneurs with an opportunity for brokering (Rodan & Galunic, 2004). Prior empirical works also suggest that knowledge heterogeneity within a network has performance benefits (Xin, 1999; Rodan & Galunic, 2004). Hambrick et al (1996) find diversity within a group can enhance the breadth of perspective, cognitive resources, and overall problem-solving capacity of the group (Hambrick *et al.*, 1996). Diversity in network contacts may have similar advantages. As indicated by Goerzen and Beamish (2005), diversity in network partners' background and

experiences may provide firms with more diverse samples of information from which to learn (Goerzen & Beamish, 2005). Since business information is more relevant to this study than demographic social positions, diversity in this paper refers to the diversity of the contacts who have different occupational backgrounds and different industrial backgrounds, respectively.   Thus, the hypothesis is as follows:

H3: The level of diversity of the entrepreneur's initial network ties is positively associated with the start-up success of the entrepreneur's small business.

3.4 Moderation conceptual model

3.4.1 Interactions with entrepreneur's networking capability

A network gives the start-up entrepreneur the potential to access the resources of his or her contacts (Zaheer & Bell, 2005), but it is the actual accessing, retrieval and utilization of the capital to the benefit of the firm that makes it competitive and results in firm performance. In small start-up firms, the entrepreneur is the person who can access, retrieve and utilize all firm resources. Thus, social capital or external network resources can be functional only if the entrepreneur has the ability to access, retrieve and utilize the resources to the advantage of the start-up firm. As Brüderl and Preisendörfer (1998) argue, only if the entrepreneur makes use of networks, can the network improve the likelihood of success.

The second conceptual model of the study, thus, includes the following proposition: the extent to which external network resources (social capital) are beneficial to a small start-up firm is also affected by the entrepreneur's ability to

access, retrieve and utilize the resources to support the creation of the new venture (Chandler & Hanks, 1994; Liao & Welsch, 2005). The abilities of entrepreneurs to access, retrieve and utilize resources are associated with the individual entrepreneur's own specific skills set or competence. The level of these skills and competence varies from entrepreneur to entrepreneur. This paper proposes that the specific skills set or competence of individual entrepreneurs has moderating effects that extend beyond the simple relationship between start-up success and certain external network resource (social capital) variables. This paper labels these networking-related skills sets as the networking capability of the entrepreneur. As discussed above, social capital can be expressed in the forms of network structure and network relations (Davidsson & Henrekson, 2002; Wu & Leung, 2005). The second conceptual model proposes that the networking capability of the entrepreneur can moderate the relationship between the initial network structure (network size and network diversity) of social capital and the success of small start-up firms.

Figure 3.3 Moderation effect conceptual model
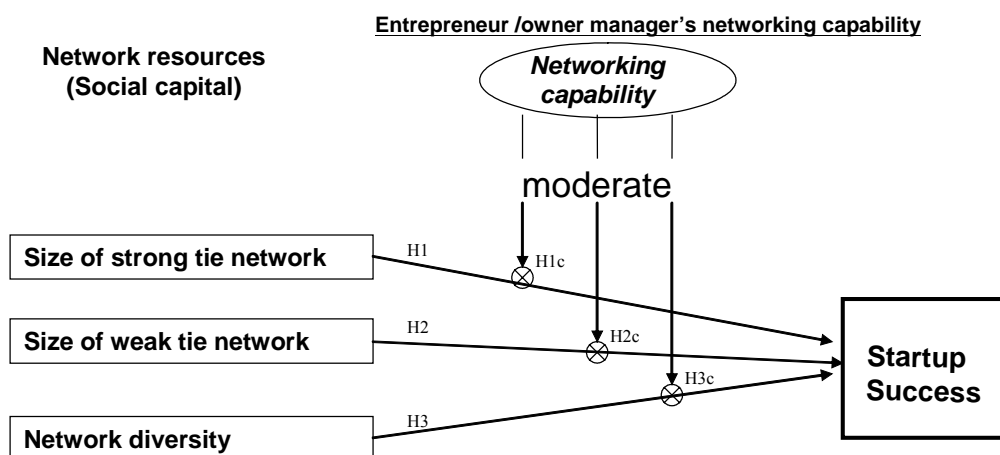
3.4.2 Moderation effect of entrepreneur's networking capability

In order to derive benefits from an external network (social capital), the first and foremost issue is to access and retrieve the benefits from social capital. The ease and convenience of accessing and retrieving benefits from social capital depend on certain specific skills of the entrepreneurs. Since social capital is embedded in the relationship with others (Adler & Kwon, 2002), interaction with the said others is, thus, an important means of accessing and retrieving benefits from social relations. The effectiveness of an entrepreneur in interacting with others, therefore, determines the ease of access to, and the amount of benefits to be extracted from, his or her relational capital. Baron and Markman (2003) use a term 'social competence' to represent overall effectiveness in interacting with others, and they propose that social competence plays a complementary role to social capital. Their social competence consists of four aspects of social skills: social perception, social adaptability, expressiveness and impression management.

The ability to access and retrieve resources from an external network is not of sufficient benefit without the ability to use the resources. Like any firm performance situation, the success of a new start-up firm depends upon the extent to which the founders can fully utilize their available resources. From the network perspective, entrepreneurs or founders need to have the competence to effectively coordinate all their network relational resources and duly allocate these resources to support their business activities so as to achieve firm performance. This requires certain managerial skills in organization and coordination of the resources (Chandler & Hanks, 1994), which may be called resource management skill. The level of

competence in resource management will have an impact on the extent to which the network resources can contribute to start-up success.

The social skills, and resource organization and coordination skills, together constitute a skill set that can facilitate the process of accessing, retrieving and utilizing external network resources. This paper labels it as the networking capability of the entrepreneur. Networking capability is therefore a set of skills that enables an entrepreneur to effectively interface with and gain trust from his or her social networks so as to allow an easy access of network resources; and enables the entrepreneur to efficiently organize and coordinate the network contacts to provide relevant resources to meet his or her business needs. In this study, networking capability consists of five skill sets: social perception, social adaptability, social expression, impression management, organization and coordination.

Networking capability as moderator

The entrepreneur with a high level of social skills or competence is expected to be more effective in communicating information and ideas to other persons (Baron & Markman, 2003). Such competence is likely to facilitate the process of gaining the trust and confidence of other people in his or her social network. It is, therefore, not surprising to find a positive association between social skills or competence and the success of new business ventures (Baron & Markmann, 2003). The causal effect of social skills or competence, however, on start-up performance is distinct from social capital. Both social skills and resource management skills are associated with the facilitation of entrepreneurs to effectively interact with their external network contacts and utilize the resources, but the skills themselves are not external resources. Although entrepreneurs with high social skills or competence may be able to

cultivate new relations or even expand existing social networks, without the initial human network or social capital, there would be no network for the entrepreneurs to apply their social skills. Furthermore, from an extended resource base view (Lavie, 2006), external networks may be regarded as idiosyncratic resources with characteristics that cannot be imitated and are non-substitutable, which leads to competitive advantage (Barney, 1991; Priem & Butler, 2001); but social skills and resource management skills are generic and can hardly be regarded as idiosyncratic resources. Based on all these reasons, it is argued that social skills or resource management skills do not directly induce a competitive advantage for start-up firms; instead, it is the effect of these skills, as suggested by the second conceptual model, that acts as moderator on the external network.

Moderation effect of networking capability on external networks

Baron and Markman (2003) suggest that social competence combines the effects of various social skills such as the ability to perceive accurately; make a good impression on others; or persuade others to change their views or behavior.

During the process of a new venture creation, entrepreneurs may need to activate direct or indirect ties, and strong or weak ties, so as to identify various opportunities and be in touch with potential customers, suppliers or business agents in accordance with the needs of the new business. In start-up situations, entrepreneurs who have a high level of social competence are more likely to get support from direct contacts or indirect contacts via introductions through established relationships. Social competence can enable entrepreneurs to perceive the clearly

prescribed norms and roles operating in organizations (Gartner *et al.* 1992); and so strategically exploit or extract resources from their relationships.

Moderation on the size of strong tie network

Davisson and Honig (2003) suggest that bonding social capital (strong ties) can provide networks that facilitate the evaluation, procurement and utilization of necessary resources for exploitation. Entrepreneurs who are high in social competence are likely to be more persuasive in convincing their strong tie networks to provide various physical or non-physical types of support. Through the application of this competency, together with the resource management skills, the utilization and exploitation of the resources can be achieved. Thus, the hypothesis is as follows:

H1c: The interaction of an entrepreneur's networking capability and the initial size of strong tie network is significantly related to start-up success.

Moderation on network size of weak tie network

In the process of a new business start-up, the entrepreneur is expected to contact many different persons whom they may not have known well before. At the early stage of a venture creation, the social competence of the entrepreneur in terms of effective communication is found by Cable and Shane (1997) to have a positive impact on the venture capitalist's view of the small firm, even though the venture capitalist and the entrepreneur may have divergent expectations of the business. In addition, good social perception skills allows the entrepreneur to perceive others

accurately, which enables the entrepreneur to determine the truth and reliability of the information they get from the network ties.

Since the advantages of weak ties lies in their serving as conduits of information (Burt, 1997), an increase in the number of social contacts is equivalent to an increase in the number of conduits. Thus, the larger is the number of weak tie contacts, the higher the chance of getting resources or obtaining opportunity information for the start-up firm. For an entrepreneur, a high level of social competence can facilitate their discovery of opportunities as well as the later exploitation of the identified opportunities of their weak tie network. As indicated by Shane and Benkataraman (2000), opportunity may be derived from several sources, and it is an entrepreneur's social perceptive skill that can enable them to recognize and adequately value the opportunities of a weak ties network. Thus, the hypothesis for weak ties and social capability is as follows:

H2c: The interaction of an entrepreneur's networking capability and the initial size of weak tie network is significantly related to start-up success.

Moderation effect of entrepreneur's networking capability on network diversity

The process of company formation is the process of organization growth, which is, in effect, the process of organizational change. Organization growth or organizational change involves the development and establishment of all sorts of business routines and processes as well as new ideas. Change needs knowledge. Knowledge may come from human resources, which is the internal human capital of the new firm. For small business start-up firms, however, the major human capital is mainly the entrepreneur. Even if the entrepreneur is knowledgeable in every aspect of the new

business, there is a need for process development and adjustment to strengthen the firm against competition. Thus, in order for the entrepreneur's firm to survive and grow, the acquisition of knowledge through learning from external sources is essential. External networks can be a source of knowledge and know-how (Zhao & Aram, 1995) for new firms. A network that is diverse can provide opportunities for new ideas and know-how. The ability to access, retrieve and utilize new ideas and knowledge from a diversified network is expected to be associated with start-up success. Thus, the hypothesis is as follows:

H3c: The interaction of an entrepreneur's networking capability and the diversity of the external network of the entrepreneur is significantly related to start-up success.

3.5 Summary and conclusion

This chapter provides theoretical justifications for the formulation of conceptual models and hypotheses. Two separate but related models are developed in the chapter. The first model proposes a direct relationship between initial external networks and start-up success. The second model proposes an association of start-up success with interactions between the initial external network structure and the entrepreneur's networking capabilities.

The hypotheses of the first model are developed on the basis of a premise of social capital theory that a social network can be an external resource of small businesses (Cooke & Wills, 1999; Frazier & Niehm, 2004; Fuller & Tian, 2006; Honig, 1998; Westlund & Bolton, 2003). It is therefore proposed that small business

founders can make use of external networks to enable their business start-up to succeed.   Both bonding social capital theories (Capaldo, 2007; Coleman, 1988; Krackhardt, 1992) and bridging social capital theories (Burt, 1992; Burt, 2005; Burt *et al.*, 1998; Davidsson & Henrekson, 2002; Granovetter, 1973) are adopted to formulate hypotheses of the direct relationship model. Bonding social capital or closed networks forms the basis of the hypotheses developed on the effects of strong tie network size, strong tie network support, and strong tie network trustworthiness, respectively, on start-up success.   Similarly, bridging social capital or weak networks forms the basis of the hypotheses developed on the effects of weak tie network size, weak tie network support, and weak tie network trustworthiness, respectively, on start-up success.   In addition, a network diversity hypothesis of start-up success is also formulated, based on bridging social capital and, especially, on the information advantage (Burt, 2005) aspects of the bridging concept.

The moderation effects on the initial network structure are addressed in the second model; they are proposed on the basis of theoretical enhancement effects of the entrepreneur's networking capability on their external social network in terms of the entrepreneur's social competence (Baron & Markman, 2003) and their resource management competence (Chandler & Hanks, 1994). Three hypotheses are developed for this moderation model including the moderation effect of the networking capability of entrepreneurs on their initial size of strong tie network, initial size of weak tie network, and initial network diversity of the new firms.

3.6 Remarks: Cross-level studies of entrepreneurial network ties

According to Brüderl and Preisendörfer (1998), there are two network perspectives of new founding companies: the personal network perspective of the entrepreneur and the firm's organizational networks perspective. Personal networks are the individual relations of the business founder who is the focal person; whereas organizational networks are the collective relations of the new firm being embedded (Brüderl & Preisendörfer, 1998). For small start-up firms, it is difficult to keep a clear demarcation between personal and organizational social capital (Adler & Kwon, 2002) because entrepreneurs are expected to bring in all their personal network to the new firms to provide the necessary resources for start-up success (Hite, 1999; Saxenian, 1990). The personal network will eventually form the entire network structure of the firm (Larson & Starr, 1993). This is in line with Chandler and Hanks' (1994) argument that, in the context of emerging business, individual-level constructs can translate into organization- level outcomes. Personal and organizational networks in a new venture formation context often converge (Johannisson, 2000; Zhao & Aram, 1995). Chandler and Hanks (1994) suggest that the complexity of multi-level research may be reduced in a new venture. Besides, it should be noted that network ties initially exist on an interpersonal level (Bhide, 2000; Zaheer *et al.*, 1998). Entrepreneurs, acting in the role of resource coordinators and agents for a firm (Bhide, 2000), often bring their personal social networks to the firms to provide the resources necessary for successful emergence (Saxenian, 1990). As Hite and Hesterly (2001) put it, during firm emergence, the social network of the entrepreneur is synonymous with the firm's network. This dissertation adopts the

cross-level approach in that it does not differentiate the start-up firm's organizational

ties from the entrepreneur's personal ties.

Chapter 4   Methodology

The purpose of this chapter is to present the methodology used to test the hypotheses of the study. This chapter includes the development of the procedure, the description of the process used to develop the survey questionnaire, the pilot procedure and the final sample selection discussions.

According to Creswell (1994), quantitative and qualitative are the two paradigms that have rooted in the 20th-century philosophical thinking. The distinctions between these two paradigms can be realized through their different approaches to reality, the relationship between the researchers and that being researched, the role of values and the rhetoric of the study. These distinctions have emerged to become two different research methodologies, the qualitative methodology and the quantitative methodology (Creswell, 1994). Methodology is a framework within which the research is conducted and facts are collected such that their meaning can be reviewed (Remenyi *et al.*, 1998). Qualitative methodology usually applies inductive logic in which the emergence of categories from informants may help to induce patterns or theories that can help to explain a phenomenon. In quantitative methodology, deductive form of logic is used, wherein theories and hypotheses are tested in a cause-and-effect relationship. The intention of the quantitative study is to allow a pre-determined hypothesis to be able to predict, explain and understand some phenomenon (Creswell, 1994).

To develop an appropriate research method, a methodological framework may be derived from either the review of relevant literature or the experience or the

results of previous research. Previous research provides a researcher a clear

expectation of how a particular phenomenon is likely to behave, from which the

researcher can formalize a model or paradigm (Remenyi *et al.*, 1998). In network

theory research, depending on specific research needs, significant numbers of both

qualitative research (Brush & Chaganti, 1996; Hite, 2005; Larson, 1991; O'Donnell

& Cummins, 1999; Torres & Murray, 2003) and quantitative research (Brüderl &

Preisendörfer, 1998; Cooke, 2007; De Clercq & Sapienza, 2006; Johannisson, 1995;

Knack & Keefer, 1997; Shankar & Bayus, 2003; Witt, 2004) can be found.

According to the finding of Patulny and Svendsen (2007), most qualitative research

on networks is relevant to bonding social capital, whilst most quantitative analysis is

related to bridging social capital. This study chose a quantitative, positivistic

approach. A positivistic approach is concerned with positive facts, and it is based on

three principles: 1) finding factors; 2) documenting facts; 3) the use of scientific

methods (Wicks & Freeman, 1998).

4.1 Procedure

As indicated by Remenyi *et al.* (1998) a suitable methodology based on precedent

research should be selected unless the case being studied surely requires new

methodological approach. Methodology of precedent research on networks or social

capital in relation to business performance is therefore used as the major reference of

this study. It is found that questionnaire survey methodology is widely used in the

study of social capital and firm performance. For instance, BarNir and Smith (2002)

use questionnaire survey to study the role of social capital on small business in inter-

firm alliances; Zhou and Wu (2007) use the survey data from China to study the

performance of global bone small and medium-size enterprises in relation to their social networks; Park and Luo (2001) use survey to measure *guanxi* and organizational dynamics of Chinese firms; Zaheer (2005) uses questionnaire survey to collect data to study the impact of firms' network position on their performance.

4.1.1 Research design

The primary objective of this research is to access the effect of initial external network, in terms of different forms of social capital, on the success of small business start-up. In order to test the posited hypotheses, to discover the relationship between external networks and start-up success of small firms, a sample field study using a single administration research instrument of questionnaire is employed. Questionnaire survey is characterized by a structure or systematic set of data (Vaus, 1995). According to Kerlinger (1992), sample survey research is strong in realism, which is important in studying dynamic, real-life business situation (Kerlinger, 1992).

Instrumentation

Many small new business network studies may need to measure the unobservable firm-specific constructs of networks and their respective impact on the start-up performance. Robust data on network resources of small firms is usually not available. Since most small firms' business performance data does not normally release, relevant secondary data source on performance can hardly be obtained either. Thus, in many cases, an appropriate method for gathering data is through survey based questionnaires. For instance, Bosma *et al.* (2004) conducts a questionnaire survey on Dutch entrepreneurs to study the value of human and social capital

investments for the business performance of start-ups; Cooke's (2007) uses a questionnaire survey to examine the effects of social capital on small and medium-sized enterprise performance

To address certain research questions, survey based approach is an appropriate method for gathering data (Atuahene-Gima & Murray, 2007). As indicated by Vaus (1995), questionnaire is the most widely used and a highly structured survey data collection technique. In questionnaire survey, each respondent is asked much the same set of questions (Vaus, 1995).

Survey question development

One difficulty in conducting social capital survey is the proper operationalization of constructs. As indicated by Brüderl and Preisendörfer (1998), one major reason why contradictory results are found in many network studies is because of the difference of operationalization. As discussed in Chapter 2, the concept of social capital is so broad that many social aspects can be included under this concept. One strategy suggested by Brüderl and Preisendörfer (1998) is to focus on the characteristics of the entrepreneurial network such as the size and the diversity of the network. The second strategy is to focus on the relational dimension such as the amount of support (Brüderl & Preisendörfer, 1998) and the level of trustworthiness (Carpenter *et al.*, 2004). Other dimensions that may potentially have impacts on firm performance are to be controlled, and these include the firm's industry, the entrepreneur's work experience, industrial experience, managerial experience, and education level.

Item generation

In order to best capture the domain of each construct, scale items were developed with reference to other instruments previous adopted by researchers (Baron & Markman, 2003; Beugelsdijk & Smulders, 2002; Brüderl & Preisendörfer, 1998; Davidsson & Honig, 2003; Jenssen & Agreve, 2002; Levin & Cross, 2004; Luk, 1996; Spanos & Lioukas, 2001)

Item reliability was examined as whether the items chosen could meet the minimum acceptable thresholds (e.g. Cronbach alpha of 0.7 or greater). Convergent and discriminant validity were also tested using factor analysis to determine if the multiple items truly measure a particular construct of social capital. Theoretical guidance and judgment were used to select the items that best meet the domain of the specific construct as defined in this study. The sources of all items used in this study are displayed later in this chapter.

As pointed out by Frazer and Lawley (2000), questionnaires should be simple and easy to read. The study uses an approach of dual languages (both Chinese and English) for each item to ensure a good level of comprehension in the Hong Kong bi-lingual environment. The overall length of the questionnaire is kept within 5 pages with a covering letter, which makes total 6 pages, well below 12 pages to be acceptable for mailing (Frazer & Lawler, 2000) and faxes. Selected small business owners of different industries in Hong Kong are consulted to provide advices on the wordings and the structure of the questionnaire prior and during the pilot run period.

Independent variables

Social capital constructs

The following section describes the item variables that are used to operationalize the constructs of the research. Construct operationalization describes the characteristics of a construct so as to make it measurable (Sekanran, 2000). The constructs to be operationalized for this study include the network size, the network diversity, the network support, the trustworthy, the firm success, and the control variables.

Initial base network

Baum *et al.* (2000) suggest that the performance of a new start-up firm is highly sensitive to the initial conditions of its networks. Since network structure of the entrepreneurs and their new firms will change over time (Hite & Hesterly, 2001) due to the change of the needs or the change of the emphasis of the new venture, there is a need to specify a period within which the network conditions are considered to be an initial network of the start-up firm.

Ostgaard and Birly (1996) refer to network size as the number of network partners (Ostgaard & Birley, 1996). Burt (1992) defines size as the number of primary contacts in a network. Ostgaard and Birley (1996) uses 6 months period (prior to the time they do their survey) to count the total number of contacts. Hansen (1995) asks his respondent to recall events that take place within 6-months preceding the hiring of the first full time employee. Hansen (1995) finds that entrepreneurs have no difficulty in recalling those events in that period of six months even though the recalling period can be as long as 5 years. The study of this paper follows Ostgaard and Birley's (1996) approach to measure the initial network size by

counting the number of contacts in the first 6 months. The number of contacts reflects the size of an action set (Hansen, 1995) of the network. The first 6 months is counted from the time an entrepreneur actively working to establish his or her new business. Thus, the initial external networks are the network ties during the first 6 months of founding the firms, and they include all social relations of the founders (Chen & Chen, 2004).

Strong tie network variable

In Putnam's (2000) view, strong ties are intimate friends. Brüderl and Preisendörfer (1998) treat spouse/life-partner, parents, friends, and relatives as strong ties. Davidsson and Honig (2003) suggest that bonding ties or strong ties consist of family, relatives and spouse and close friends. Jenssen and Greve (2002) use the degree of relationship (Krackhardt, 1992) to represent the strength of ties and they treat close friends or friends as strong ties. Their degree of friendship is an ego-centric measure, which means based on the view point of the entrepreneurs. The study adopts the ego-centric approach and treats close friends, parents, family members and relatives as strong ties.

Weak tie network variable

Brüderl and Preisendörfer (1998) qualify business partners, acquaintances, former employers, and former co-workers as week ties. Davidsson and Honig (2003) suggest that bridging ties or weak ties consist of any business networks including trade associations, chamber of commerce or service clubs such as Lion or Rotary

club and membership of start-up teams. Jenssen and Greve (2002) treat acquaintance and loose acquaintance as weak ties.

In this study, the concept of weak ties is considered to be acquaintance, loosely or newly acquainted individuals, and organizational contacts such as supplier organizations, customer organizations, agencies, competitors, trade associations, chamber of commerce, social and recreational club membership, alumni bodies, professional institutions and voluntary organizations.

Trustworthy network variable

Trust can be measured by the degree of confidence that the entrepreneurs trust the information provided by their network (Levin). This study adopts the similar measure of trust as in Levin and Cross' (2004) study. Respondents are asked to what extent they trust their source and the information to be obtained from their source prior to seeking information or advice from them. For this construct, total five questions are developed, in which three questions are related to benevolence-based trust and two questions are related to competence-based trust.

Network diversity variables

Diversity can enhance the breadth of perspective, the cognitive resources, and an overall problem solving ability (Hambrick, Cho, and Chen, 1996). Knowledge and experience heterogeneity within a network is likely to provide benefits that improve firm performance (Hargadon and Sutton, 1997; Pelled, Eisenhardt, and Xin, 1999; Rodan and Galunic, 2004). The network diversity variable measures the entire

network (the action set) of the entrepreneur and it does not differentiate the strong tie or weak tie networks. For this study, the diversity variable is focused on the business related aspects rather than the social demographic aspects. Two kinds of diversities are therefore adopted: the diversity of the industrial background of the contacts; the diversity of the occupations of the contacts.   These two types of backgrounds are chosen because they likely reflect the heterogeneity of both knowledge and experience as mentioned in the above and they are practically easy to obtain and measure. Thus the choice of these two is due to both theoretical reason and practial reason.

Networking capability moderating variables

The networking capability construct adopts Baron and Markman's (2003) four social competence variables and their respective questionnaire items. The four competence are social perception, social adaptability, expressiveness, impression management. In addition, a dimension on resource organization and coordination skill is adopted from Chandler and Hanks (1994) on their measure of the resource management aspect of managerial competence. Thus, the networking capability variables have total five elements.

Success measures

Success can involve both the subjective views of business founders and the objective business performance of firms (Street & Cameron, 2007). Unlike failure, success is not easily and objectively defined (Gadenne, 1998). Although there are many studies (Duchesneau & Gartner, 1990; Gadenne, 1998; Lussier, 1996; Watson, 2002)

suggesting the measures of success of small business to be in financial terms, there are also substantial amount of studies adopting the meaning of success as reaching certain stated business goals (Ahwireng-Obeng, 2001a; Alvarez & Barney, 2001; Beecham & Cordey-Hayes, 1998; Brüderl *et al.*, 1992; Dodd *et al.*, 2002; Street & Cameron, 2007).

In addition to contrast views of using financial terms versus reaching non financial goals as the measures for small new business success, there are also contrast views on using subjective versus objective measures of success. Nevertheless, both objective and subjective measures are found in the studies of small new businesses, and these measures include profitability, sales growth, or employee growth (Ballantine *et al.*, 1992; Jeffcoate *et al.*, 2000; Kai Ming Au & Enderwick, 1994; Kaufmann, 1995; Keeble *et al.*, 1998). In certain situations, survival is also considered to be a measure of start-up success (Bosma *et al.*, 2004; Brüderl *et al.*, 1992). Intuitively, success firms must be able to survive.

Profit growth and sales growth

Survival is a necessary and pre-requisite condition for start-up success. As suggested by Brüderl and Rreisendorfer (1998), survival can be seen as a minimum criterion of success. Since small firms are assumed to be in lack of physical resources, it is expected that small firms cannot sustain negative profits for too long. Financial profit growth is thus adopted in this paper as one of the measures of the success of start-up.

Starting up a commercial firm is about to run a business. Revenue generation is normally the major activity of any commercial business. Thus, many start-up studies use sales revenue as a means of measuring start-up performance (Bosma *et al.*, 2004; Lee & Tsang, 2001; Park & Luo, 2001; Watson *et al.*, 1998). The paper adopts sales growth as another measure for small firm start-up success.

Entrepreneur's self reported success measure

Since small start-up firms are privately owned, it is generally difficult to get objective financial data from the owners (Chandler & Hanks, 1994). Moreover, Chandler and Jansen (1992) also show that self-reported return such as ROE, ROI or ROA are not reliable for start-up firms (Chandler & Jansen, 1992). In Contrast, some researchers (Brush & Vanderwerf, 1992; Chandler & Hanks, 1993) have found substantial evidence to support that self-reported categorical performance is considerably reliable. As indicated by Venkatramen and Ramanujam (1986), neither objective nor perceptual measures are universally superior.

Luk (1996) measures success by the level of performance exceeding the expectation of the firm's owners. According to Luk (1996), the owner's satisfaction with the performance of his or her own business is the most important indicator of success. Luk (1996) suggests the following expectation: achievement of expected profit goal; the number of employee growth; and annual sales volume (Luk, 1996). Since this paper is focused on small new business with fewer than 20 employees, the variation in the number of employees at the start-up stage is not expected to be significant. Besides business growth in terms of revenue can also provide similar information on the performance of the new business. This paper, therefore, does not

choose the number of employees as one of the measures. Instead, it adopts the owner-manager's expectation on his or her firm's overall performance in the industry as one of the measures.

Conclusively, there are total three different measures for start-up success: self-reported sales growth; self-reported profit growth; owner manager's expectation on the start-up firm's performance. Following Brüderl and Preisendörfer's (1998) approach to use the average growth in the first three years of existence of the firm as the measure, this study uses average sales growth and average profit growth in the first three years of founding of the new business.

<u>Control variables</u>

Five control variables are identified as having potential influences on the performance of new business start-up. The first is the owner manager's years of work experience prior to start-up. Work experience provides knowledge and confidence to the owner to overcome difficult situations in the new business and thus impacting the new firm performance. It must be controlled. The secondth is the owner manager's years of industrial experience prior to start-up. Industrial experience is an important human asset to the firm and it also determines the type of business the entrepreneur chooses for start-up. The third is the owner manager's years of management experience prior to start-up. Management experience involve manging both people and resources which are important to any business entity. With and without such experience is likely to impact the success of the firm. The fourth is the type of industry of the new firm. Different type of industry is likely to have different needs for external network resources. For example, a business broker probably needs a larger network than a small retail shop owner in the street. Thus,

the level of impact of external networks may vary with the types of industry and control is therefore needed. The fifth is the education level of the owner manager. Education level reflects the ability of the owner manager to plan, to organize, to communicate and to learn new things, which are likely to impact the performance of the new business, and thus needs to be controlled.

4.1.2 Measures of constructs

Independent variable constructs

Table 4.1 Size of strong tie network

Scale Item	Source
1. Close friends (non-kin primary group)	Brüderl & Preisendörfer (1998); Davidsson & Honig (2003) Jenssen & Greve (2002) Beugelsdijk & Smulders (2004)
2. Family members: spouse, parents, siblings (closed kin)	Brüderl & Preisendörfer(1998); Davidsson & Honig (2003) Jenssen & Greve (2002)
3. Relatives: uncles, aunties, cousins, kins (extended kin)	Davidsson & Honig (2003)

Table 4.2 Size of weak tie network

Scale Item	Source
1. Acquaintance, loose contacts	Brüderl & Preisendörfer(1998);
2. Formal and informal organizational contacts	Beugelsdijk & Smulders (2004)

Table 4.3 Network diversity

Scale Item	Source
1. Diversity of contact's occupational background	New item (Demographic aspect[10])
2. Diversity of contact's industrial background	New item (Demographic aspect)

Table 4.4 Network support (support from strong tie network and support from weak tie network respectively)

Scale Item	Source
1. How much support received from close friends	Adopted and modified from Brüderl & Preisendörfer(1998);
2. How much support received from family members: spouse, parents, brothers and sisters	Adopted and modified from Brüderl & Preisendörfer(1998);
3. How much support from relatives: uncles, aunties, cousins, (extended kin)	New item
4. How much support received from acquaintance, newly acquainted individuals, business contact persons	New item (modified from Brüderl & Preisendörfer (1998))
5. How much support received from business organizational contacts	New item
6. How much support from non-business organizational contacts	New item

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[10] Demographic diversity has been adopted in Reagans,and Zuckerman (2001) and in Chatman, Polzer *et al.* (1998)

Table 4.5 Trustworthy of social network

Scale Item	Source
Prior to seeking information from contacts:	
1. Assume that the contact looked out for the interest of the entrepreneur	Levin & Cross (2004)
2. Assume that the contact would make sure entrepreneur would not be harmed or damaged by the information or advise.	Levin & Cross (2004)
3. Assume that the contact cares about entrepreneur.	Levin & Cross (2004)
4. Believe the contact approach his or her job with professionalism and dedication	Levin & Cross (2004)
5. Based on contact's record, entrepreneur has no reason to doubt the provider's competence and preparation	Levin & Cross (2004)

Table 4.6 Moderating variable construct: Networking capability

Scale Item	Source
Social perception	Baron & Markman (2003)
1. I am a good judge of other people	
2. I can usually recognize other's traits accurately by observing their behavior	
3. I can usually read others well – tell how they are feeling in a given situation	
4. I can tell why people have acted the way they have in most situations.	
5. I generally know when it is the right time to ask someone for a favor	

Social adaptability 1. I can easily adjust to being in just about any social situation 2. I can be comfortable with all types of people – young and old, people from the same or different backgrounds as myself 3. I can talk to anybody about almost anything 4. People tell me that I'm sensitive and understanding 5. I have no problems introducing myself to strangers	Baron & Markman (2003)
Expressiveness 1. People can always read my emotions even if I try to cover them up 2. Whatever emotion I feel on the inside tends to show on the outside 3. Other people can usually tell pretty much how I feel at a given time 4. I am often concerned about what others think of me	Baron & Markman (2003)
Impression management 1. I'm good at flattery and can use it to my own advantage when I wish 2. I can ready seem to like another person even if this is not so.	Baron & Markman (2003)
Network resource organization & coordination 1. I make resource allocation decisions that achieve maximum results. 2. One of my greatest strengths is organizing resources and coordinating tasks.	New Item - adopted and modified from the managerial competence survey items of Chandler & Hanks (1994)

Dependent variable construct

Table 4.7 Success measures

Scale Item	Source
1. Sales growth*	Spanos & Lioukas (2001)
2. Sales growth vs competitors	Spanos & Lioukas (2001)
3. Profitability growth*	Spanos & Lioukas (2001)
4. Profitability growth vs competitors	Spanos & Lioukas (2001)
4. Owner manager's self rated success	Luk (1996)

* -- additional measures after getting feedback in the pilot run [11].

4.1.3 Scales

Other than the size of networks which are counted by numbers, all the network constructs[12] and the success constructs adopt Likert scales. Likert scale is widely used to derive quantity values for both business research (Zikmund, 2003) and social research (Vaus, 1995). In this study, both five-point scales and seven-point scales are used. Five-point scales are used to measure the support of strong tie and the support on weak tie respectively. Informats were asked to assess how useful is the support they received from those ties. Seven-point scales are applied to all other Likert scale constructs. Using a seven-point scales, as oppose to a five-point scale,

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[11] In the pilot run, small business owners claimed to have difficulty in giving answers to questions related to their competitors. Their answers in relation to competitors were more a guess than a fact. Their reasons are: 1. There were too many competitors in small businesses to make proper comparisons; 2. Their limited resources can only allow them to focus on their own business and not on their competitors' businesses.

[12] Two different scales are used for network diversity, Likert scale and measurement by numbers respectively. Likert scale items are adopted for analysis as they have better result on reliability test.

can provide a wider delineation of responses. As for the control variables, numeric measures are used for the years of experience, and ordinal scale is used for education level.

All firm success measurements are self-reported by the sample population. In order to avoid bias from any temporal fluctuations, and take into consideration of the possibility of some non-performing period or investment period at the early stage, success are measured by the average of the first three years results.

4.1.4 Pre-test

As a general practice of conducting research (Frazer & Lawler, 2000), the instrument was tested through the administration of a pilot study by choosing five small firms to do pilot run. Feedbacks were recorded and used to amend the questionnaires such as the questionnaire layout, the clarity of wordings and the appropriateness of the questions. Significant changes were made on the success measures: two different but related success measures were added -- the absolute sales growth rate and absolute profit growth rate.

4.2 Dissertation methodology

4.2.1. Sampling frame

The study is focused on the small business start-up in Hong Kong. Hong Kong small businesses are the target. Three particular parameters are used for the sample selection, and these are :

1. Only firms with 20 or fewer employees (including owner managers);

2. Only firms that has been in business for at least three years.

3. Only local firms with Hong Kong resident owners

The justifications of these selection criteria are as follows:

First, the study is about the start-up of small firms. The definition of small firms has been defined in the introduction chapter of having no more than 20 people companies. Second, the study is focused on the success of start-up and there is no definite time when start-up is considered to be completed. Since the success of the first few years are generally critical to new business, three-years period has widely been used in small new business studies (Bosma *et al.*, 2004; Zhou *et al.*, 2007). Third, the study is about the Hong Kong entrepreneurship. The branches of overseas companies are therefore excluded.

4.2.2 Sample size and justification of selected sample

The study distributes questionnaires to 1,000 firms with an anticipated rate of 10 to 12 percent responses. Since local registered small firms (fewer than 20 people) are the target, blind distribution to all companies in popular database is not used. The target firms are obtained through network channels and specific database covering different industries. For instance, the firms sourced from KOMPASS database are selected from discrete groups so as to maximize the generalizability.

Informant Selection

Owner managers of small firms are the target respondent. Thus single informant is used for each firm.

4.2.3 Data collection

The administering the questionnaire and collecting the instruments data were done in different phases. As suggested by Delener (1995) that personalization of cover letters, an assurance of confidentiality, and offering of incentives are positively associated with response. Thus, at the first phase, a cover letter describing the objectives of the study, assuring the privacy and confidentiality, including standard ethical wordings suggested by Curtin University of Technology as well as offering the summary results of the study was developed. To enhance the personalization of the cover letter, whenever available, the names of the owners are addressed in the letter.

To ensure the questionnaire is easy to understand while at the same time capturing the data necessary to carry out the research (Frazer & Lawler, 2000), the study uses a dual language questionnaire approach. Both Chinese and English are used on each question and answer in the questionnaire. The final version of questionnaire (Appendix A-3) contains 55 questions in 5 pages.

The survey was conducted over the months of December 2007, January and February 2008. Shortly after the final sample was determined, cover letters and questionnaires were printed and saved in electronic format. Three different distribution methods were used to distribute the questionnaire: email, fax and direct mailing. The return of questionnaire by mailing is addressed to Lingnan University in Hong Kong. The return email address is the researcher's email account at Lingnan University. Reminders (Appendix) are sent for several times via emails, faxes, phone calls as well as mailings two weeks after the distribution.

Chapter 5   Results and analysis

The purpose of this chapter is to test the proposed research hypotheses and the network models and to explain the empirical results. The first section provides a general description of the survey respondents, the evaluations of the responses and the bias results. The second section examines and assesses the scales measuring the key constructs. The last section discusses the results of statistical test on the hypotheses.

5.1 General characteristics of the sample

5.1.1 Response rate

The sample was taken from the following sources with requirement of companies with no more than 20 people.

- Hong Kong Industry and Trade Department (400 firms)

  - The department assisted in sending out 400 survey emails to entrepreneurs who had participated in their small and medium-size enterprise mentor/mentee programs. They sent the same emails out for two times. The second time included a reminder.

  - About 150 firms that could be reached by phone were followed by phone calls in addition to email reminder.

- KOMPASS Hong Kong Internet database (300 firms) – by mails.

- Science and Technology Park (120 firms) – by mails and faxes

- Hong Trade Development Council network (30 emails) – by emails

- Hong Kong Institute of Marketing and personal networks (100 emails) – by fax and emails

● Small and Medium Business Institutions (50 emails) – by emails

1,000 questionnaires were distributed of which 400 questionnaires were distributed by mail, 50 by fax and the rest by email. Reminders were sent by emails, phone calls and faxes two weeks after the questionnaires were sent. Reminders for email were made for more than one time and mostly followed up by phone calls or faxes. Email reminder was found not effective. If using email reminder alone, the response rate seemed to be no more than 1%. Multiple phone calls to follow-up were made to increase the response rate. Unlike email, mailing did not need as much follow-up as the emails. Mailing approach seems to get a higher response rate emails and faxes.

Of the 1,000 surveys sent, 36 were undeliverable (email bounce back, fax number not valid, mail addresses not valid). The total completed and returned responses is 96. Thus, the response rate is approximately 10 percent (96 returned surveys divided by 964).

Of the 96 returned responses, 7 responses were not included in the data analysis, out of which 2 were extremely incomplete and not suitable for use, 4 were too new and did not meet requirements of 3 years of establishment, and 1 had a lot more than 20 employees and not qualified as small business.

5.1.2 Non response bias

Non-response bias test is a test to determine if respondents are of any difference than those in the sample who do not respond. An independent sample test was conducted to compare the early respondents with late respondents on two key control variables, the work experience and the industry experience prior to start-up. The independent

sample test employs split-half means approach, in which the t-test for equality of

means of the first half of the respondents are compared with the t-test for equality of

means of the second half of the respondents. The result is shown in table 5.1 below.

No significant differences were found between the early respondents and the late

respondents for both variables.

Table 5.1 Non response bias test by split half means

Independent Samples Test								
		Levene's Test for Eq. of variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Work experience	Equal variances assumed	.665	.417	-.853	87	.396	-1.264	1.482
	Equal variances not assumed			-.851	83.990	.397	-1.264	1.485
	Mean Std Dev.							
1st half <45	12.89 7.558							
2nd half >=45	11.62 6.386							
Industrial experience	Equal variances assumed	.974	.326	.400	87	.690	.556	1.390
	Equal variances not assumed			.399	81.816	.691	.556	1.394
	Mean Std Dev.							
1st half <45	6.47 7.280							
2nd half >=45	7.02 5.762							

5.1.3 Common method bias

The measurement of the research constructs is based on the perceptual judgment of a

single individual, the company owner or the founder of the company, with no

additional assessment taken from other individuals. Such a measurement technique

may raise the issue of common method bias, which may cause errors when a single

informant fills out items that tap into independent and dependent variables within the same survey instrument. The factor analysis below (see table 5.5 and table 5.6), however, demonstrates that a single factor solution does not emerge as evidenced by Harmann's ex post one-face text (Podsakoff & Organ, 1986). Thus, it is unlikely for this research to have common method bias.

5.1.4 *Demographic and control variables descriptions*

Age of the firm

Since the first 3 years of performance data is used for measuring firm performance, the minimum age of a firm is 3 years old. The mean number of years is 6.59 and standard deviation is 4.181 No case is missing for the age of the firm. Anyway, age is not used as a control factor in this study because it is the first 3 years of start-up performance that is measured, not the most recent years. As long as a firm exists longer than three years, it is included in the sample. The number of years after the first 3 years is not relevant to the study because it does not affect the performance of the first 3 years of start-up. The logic is simply because the future activities of a firm cannot influence its past performance.

Size of the firm

In this study, the firm size is controlled to 20 people or below to fulfill the definition of small business. The average (the mean) size of the firms in terms of the number of people is 5.33, and the standard deviation is 3.952. No case is missing.

Experience of owner managers

The average work experience prior to start-up of the business is 12.25 years and the standard deviation is 6.979 years. No case is missing.

The average industrial experience of the entrepreneurs prior to start-up their business is 6.75 years and the standard deviation is 6.525 years. No case is missing.

The average management experience of the entrepreneurs prior to start-up their business is 5.9 years and the standard deviation is 6.24. No case is missing.

Education level of owner managers

The education distribution is listed in table 5.2 below.

Table 5.2 Education level of owner managers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Primary	3	3.4	3.4	3.4
	Secondary	17	19.1	19.1	22.5
	Post Secondary	7	7.9	7.9	30.3
	University or above	62	69.7	69.7	100.0
	Total	89	100.0	100.0	

Types of business/industry

All firms in the sample are independent and privately owned. Eight groups of business types are identified and they are listed in table 5.3 below:

Table 5.3 Types of business/industry of respondents companies

	Frequency	Percent	Valid Percent	Cumulative Percent
Consultancy	8	9.0	9.0	9.0
Design/Advertising	7	7.9	7.9	16.9
Education training services	4	4.5	4.5	21.3
Finance/accounting/ legal services	5	5.6	5.6	27.0
IE/trade/retail/wholesale	23	25.8	25.8	52.8
IT/Technology/telecom	20	22.5	22.5	75.3
Manufacturing	12	13.5	13.5	88.8
Others	10	11.2	11.2	100.0
Total	89	100.0	100.0	

5.2 Psychometric evaluation of the constructs

The construct reliability test, the convergent validity test and the discriminant validity test are respectively conducted to the multiple-item constructs of this study. These tests do not apply to single item constructs such as the size of ties and their respective level of support. The size of strong tie network and the size of weak tie network are measured respectively by counting the number of ties according to the types of ties specified in the questionnaire. The corresponding support items are also single items and are therefore not tested.

It is found that the response rate (or completion rate) on one item (item 1, the number of close friends) of the strong tie construct is much higher than the other types of strong tie relationship. The responses of other types of strong ties are found mostly 0 or no response. The same phenomenon is found on the weak tie construct,

i.e. the response rate (or completion rate) on one item (item 9, the number of general contacts) of the weak tie construct is much higher than the other types of weak tie relationship. The responses of others types of weak ties are mostly 0 or no answer. Thus, only item 1 in the questionnaire about strong tie relationship is used for the measurement of the size of strong tie network, and only item 9 in the questionnaire about weak tie relationship is used for the measurement of the size of weak tie network. All other types of strong tie relationship and weak tie relationship are removed from the analysis.   Since the support construct is related to the respective types of ties, only the corresponding items of the support construct of the above two types of ties are included in the analysis, whereas all other support items are removed.

5.2.1 Reliability test

The construct reliability test can indicate the degree to which a set of items used to measure a construct is consistent in their measurement. Cronbach's alpha is used to do this test. A general acceptable threshold of Cronbach's alpha is at 0.7 or above (Vaus, 1995). Most of the multiple item constructs are found to exceed the 0.7 threshold except the network diversity construct which has 4 items. This is probably due to the fact that there are two different measurement scales employed for the network diversity construct: 2 items use Likert scale; 2 items use numerical measures. Since the Likert scale items are found to have higher Cronbach alpha than the 2 numerical items, the 2 numerical items are thus dropped. The resulting number of items for the network diversity construct is thus reduced from 4 to 2.

Although the Cronbach apha for the trustworthy of strong tie networks construct exceeds 0.7, one item of this construct is still removed. This is due to the

fact that this particular item does not meet a loading factor of 0.5 in the convergent validity test, which is a test to be discussed in next section. Thus, the number of items for the trustworthy of strong tie networks construct is reduced from 5 to 4. The same approach applies to the social perception moderating variable, in which the number of items is reduced from 5 to 3. The construct reliability results are shown in Table 5.4 below:

Table 5.4 Reliability analysis

Constructs	Initial items	Final	Alpha
Trustworthy of strong ties (independent variable)	5	4	0.8449
Trustworthy of weak ties (independent variable)	4	4	0.7674
Network diversity (independent variable)	4	2	0.9386
Networking capacity (moderation variable)			
- Social perception	5	3	0.8759
- Social adaptability	5	5	0.8911
- Social expressiveness	4	4	0.8390
- Impression management	2	2	0.8551
- Resource organization	2	2	0.8053
Start-up success (dependent variable)	5	5	0.8549

5.2.2 Convergent validity

A validity measure is one which measures what the measure is intended to measure (Vaus, 1995). As suggested by Carmines and Zeller (1979), factor analysis provides a suitable means to examine convergent validity. In factor analysis, loading can be used to detect whether or not an item appropriately loads on its predicted construct. According to Hair *et al.* (1987), loading of 0.5 or greater can be considered to be very significant. For this study, 0.5 loading is adopted as the threshold for removal. Using SPSS, multiple-item variables (both independent and moderating variables)

are tested with the VARIMAX rotation method to assess their loading. With the exception of one item in the trustworthy of strong ties construct and two items in the social perception construct mentioned in the previous section, all the multiple-item constructs exceed 0.5 threshold. To maintain the entire set of constructs exceeding the convergent validity threshold of 0.5, these three non-compiling items are removed. The final loadings are shown in Table 5.5 below.

Table 5.5 Convergent validity

		Item #	Mean	Std. Deviation	Loading
Independent variables	Trustworthy of strong ties construct	V8	5.33	1.397	**.855**
		V9	5.57	1.277	**.879**
		V10	5.40	1.174	**.835**
		V11	5.45	1.079	**.797**
	Trustworthy of weak ties construct	V17	3.78	1.100	**.807**
		V18	3.78	1.111	**.808**
		V19	3.91	.892	**.708**
		V20	4.63	.975	**.624**
	Network diversity Construct	V21	4.54	1.627	**.945**
		V22	4.35	1.643	**.933**
Moderating variables	Social perception	V25	5.29	.899	**.573**
		V26	5.17	.955	**.770**
		V27	5.24	.977	**.814**
	Social adaptation	V30	5.04	1.246	**.750**
		V31	5.36	1.199	**.915**
		V32	5.04	1.246	**.865**
		V33	4.77	1.245	**.707**
		V34	5.21	1.415	**.770**
	Social expression	V35	4.39	1.353	**.841**
		V36	4.26	1.407	**.861**
		V37	4.06	1.264	**.888**
		V38	4.74	1.506	**.708**
	Social impression	V39	4.40	1.398	**.846**
		V40	3.90	1.394	**.846**
	Organizing & coordination skills	V41	4.90	1.048	**.843**
		V42	5.06	1.134	**.818**

5.2.3 Discriminant validity

To test discriminant validity is to assess whether the items that measure a construct do not correlate too highly with the measures from the other constructs (Churchill,

1979). To access discriminant validity, the SPSS factor analysis method is used.

The loading of each item with its associated factor (construct) is compared with all

its cross-loading. All multiple items of independent and moderating variables are

found to have higher loadings with their own corresponding factors in comparison

with their cross-loading items. This suggests the existence of discriminant validity in

the multiple-item variables. The results are listed in table 5.6 below.

Table 5.6 Discriminant validity

Item #	Independent constructs			Moderating constructs				
	Strong tie trust-worthy construct	Weak tie trust-worthy Construct	Network diversity construct	Social perception	Social adaptation	Social expression	Social impression	Organization & coordination skills
V8	**.855**	.202	.110	-.023	-.023	-.016	.014	.066
V9	**.879**	.162	.107	-.060	-.029	-.052	.103	.018
V10	**.835**	.077	.092	-.002	.082	.076	-.183	-.160
V11	**.797**	.029	.119	.024	.090	.108	-.164	-.113
V17	.076	**.807**	.121	-.080	.011	.012	-.019	.102
V18	.162	**.808**	.122	-.175	.041	.073	.093	.114
V19	.327	**.708**	-.056	.057	.088	-.031	.224	-.185
V20	.012	**.624**	-.144	.399	.180	.127	-.156	-.251
V21	.172	.093	**.945**	.081	-.076	.040	.032	.035
V22	.223	.041	**.933**	.003	.000	.050	-.032	.129
V25	-.044	-.085	.068	**.573**	.316	-.236	.272	.341
V26	.037	.047	-.004	**.770**	.198	-.165	.201	.240
V27	-.092	-.108	.095	**.814**	.320	-.083	-.027	.144
V30	.021	.162	.017	.165	**.750**	-.003	.176	.105
V31	.078	.081	-.016	.128	**.915**	-.045	.017	.071
V32	.040	-.011	-.094	-.024	**.865**	.067	.182	.049
V33	.085	-.083	-.027	.404	**.707**	.137	.105	-.012
V34	-.075	.085	.029	.225	**.770**	.075	.141	.250
V35	.093	-.012	.063	-.060	.176	**.841**	.004	.057
V36	.021	.040	.056	-.068	-.044	**.861**	-.098	.013
V37	-.045	.007	-.013	-.180	.049	**.888**	.040	-.049
V38	.046	.116	-.021	.080	-.030	**.708**	.356	.182
V39	-.051	.098	.021	.099	.297	.128	**.846**	.029
V40	-.159	.037	-.016	.115	.231	.025	**.846**	.071
V41	-.136	.002	.082	.123	.184	.074	.072	**.843**
V42	-.028	-.005	.079	.272	.160	.099	.023	**.818**

5.2.4 Correlations between key measures

The means, the standard deviations, and the correlations coefficients of all variables used to test the hypotheses are summarized in Table 5.7 in page 141. As indicated by Bryman and Cramer (2005), predicator variables that show a relationship at or in excess of 0.8 may be suspected of exhibiting multicollinearity (Bryman & Cramer, 2005). Multicollinearity is regarded as a problem because it means that the regression coefficients may be unstable (Mendenhall & Sincich, 1993). Although there are some significant inter-correlations between the independent and the moderating variables in the data, all of the correlation coefficients are far below the level of 0.8 (Licht, 1995). Relatively low inter-correlations between independent variables indicates that multicollinearity is unlikely a problem (Chandler & Hanks, 1994).

Table 5.7 Correlation table of all variables

Variables	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Control																							
	12.25	6.979																					
2. Industrial experience	6.750	6.525	.192																				
	5.900	6.240	.751**	.196																			
	5.090	2.049	-.008	-.059	-.175																		
	3.440	.9160	-.106	-.048	.091	-.227*																	
Predictor																							
6. Size of strong tie network	5.080	4.151	.026	-.042	.117	.080	-.101																
7. Strong tie support	3.590	1.079	.075	.027	.042	.059	.086	.127															
8. Strong tie trustworthy	5.427	1.070	-.232*	-.251*	-.243*	-.028	-.017	-.013	.125														
9. Size of weak tie network	11.67	19.71	.211	-.032	.156	.140	.086	.143	-.114	-.142													
10.Weak tie support	3.410	.9180	.145	-.015	.109	-.119	-.029	-.047	.207	.030	.038												
11.Weak tie trustworthy	4.046	.8019	-.172	-.203	-.220*	.071	.113	.084	.018	.333**	.136	.120											
12.Network diversity	4.466	1.588	-.198	-.062	-.151	.025	.186	-.100	.025	.287**	.041	.113	.094										
Moderators																							
13.Social perception	5.251	.8138	.014	.096	.013	.036	.013	.218*	.307**	-.034	.016	.192	.034	.083									
14.Social adaptation	5.082	1.057	.097	-.019	.027	.018	-.105	.223*	.444**	.053	.163	.215	.184	-.021	.540**								
15.Social expression	4.371	1.121	.175	-.012	.106	-.054	.006	.000	-.133	.051	.284**	.019	.103	.040	-.163	.112							
16.Soical impression	4.182	1.289	.029	.141	-.088	.047	-.082	.123	.130	-.141	.090	.142	.150	.011	.308**	.423**	.159						
17.Organization & Coordination skills	4.994	1.004	.153	.245*	.183	-.014	-.022	-.011	.281*	-.103	.013	.222	.008	.191	.405**	.294**	.095	.216*					
Criteria																							
18.Sales growth	3.930	1.493	.116	-.095	.040	.062	-.121	.302**	.191	-.030	-.024	.280*	-.035	.231(*)	.138	.098	-.090	.097	.134				
19.Sales vs competitor	4.260	1.576	.149	.174	.075	.068	-.159	.102	.107	-.033	.053	.183	-.086	-.032	.005	.120	.034	.050	.168	.528**			
20.Profit growth	4.480	1.395	.012	.104	.047	-.038	-.111	.147	.283*	-.052	.083	.079	-.247*	-.013	.185	.203	-.044	.186	.213*	.464**	.518**		
21.Profit vs competitor	4.070	1.270	.032	.086	.017	-.021	-.055	.129	.083	.009	.047	-.016	-.095	.155	.223*	.111	.094	.081	.193	.529**	.608**	.632**	
22.Expected success	4.100	1.479	.134	.232*	.034	-.117	-.110	.023	.158	.053	-.072	.178	-.090	.182	.142	.140	-.025	.131	.247*	.520**	.525**	.517**	.538**

† Significant < 0.1   * Significant < 0.05   ** Significant <0.01   *** Significant <0.001

5.3 Test of hypotheses

The hypotheses developed in this study reflect a theoretical proposition predicated by network theory of social capital. It should be noted that the items chosen for this study are by no means exhaustive. The study only focuses on the impacts of certain specific network constructs on start-up success, and it does not examine all the network resources or factors that the entrepreneurs may use for starting up their businesses.

5.3.1 Statistic techniques for hypothesis testing

The study consists of two separate parts. The first part (direct relationship model) is associated with the proposition that there are positive direct relationships between selected external network constructs and the start-up success of small firms. Multiple linear regression statistical technique is used for this part. The second part (moderation model) is about the effect of the interaction between the networking capability of the entrepreneurs and the selected network structure constructs with respect to the start-up success of small firms. For this part, hierarchical multiple linear regression statistical technique is used.

Multiple regression analysis can predict changes in one dependent variable by simultaneously accounting for the impact of all other independent variables of the model with respect to their weighted combination. The test is based on the multiple correlation R calculated in the analysis. R is the square root of the coefficient of determination which expresses the correlation between dependent variable and all independent variables collectively. A statistical test that is related to R-square (R^2) is the F ratio. While R reflects how well the independent variables collectively correlate with the dependent variable, F ratio tests the statistical significance of the whole equation (Bryman & Cramer, 2005). Given that the F ratio is significant, the R-square (R^2) statistic indicates the proportion of the variance of the dependent variable that is accounted for by the multiple regression equation (Hair *et al.*, 1995). R^2 is normally referred to coefficient of multiple determination. In the regression quation, the R of each independent variable is represented by the coefficient β of the variable.

The direct relationship model proposes that external networks are positively associated with start-up success. The hypothesis of each individual external network construct is tested by conducting regression analysis based on the mathematic model of the construct. A regression analysis of the full direct model is also conducted. The full model has all the external network construct variables, the control variables and the specific dependent variable entered into a linear multiple regression equation in SPSS. Since the hypothesis of each individual construct is developed based on its own theory of social network, the full model regression analysis is not used to test the individual hypotheses but to verify the overall conceptual model only.

To test the moderating effect of the moderation model, the study follows Venkatraman's (1989) suggestion of using moderated regression analysis approach. The moderation or interaction effect is expressed in terms of the multiplication of relevant independent variables and the corresponding networking capability variables (Venkatraman, 1989). The moderating model is represented by the equation: $Y = $ constant $+ \beta_1 X + \beta_2 Z + \beta_3 X*Z$, where X is the independent variable, Z is the networking capability variable. To test the moderation effect of the networking capability variables with selected external network constructs on start-up success of small firms, hierarchical multiple regression test is used. Hierarchical multiple regression test allows the calculation of an F-test to see if the addition of one more predictor variable to an existing multiple regression equation will significantly increase the predictability of the criterion (Jaccard *et al.*, 1990). The variables are entered into two separate blocks. The first block of the variables goes without the corresponding multiplicative term while the second block of variables goes with the corresponding multiplicative term.

Since multiplicative effect may result in high level of multicollinearity, which may cause computational errors (Chandler & Hanks, 1994), Cronbach (1987) suggests a resolution by centering the variables prior to forming the multiplicative term. The centering of multiplicative term is in such a format: (X- mean of X)(Z- mean of Z) (Cronbach, 1987). The multiplicative terms in this study are all centered before respective multiplications are performed.

5.3.2 Hypothesis test – test linear association with start-up success

Test of hypothesis H1:Effect of the size of strong tie network on start-up success

Mathematical model for Hypothesis H1

$$SS = \infty_0 + \beta_1 Workexp + \beta_2 Indexp + \beta_3 Manexp + \beta_4 Indtype + \beta_5 Edu + \beta_6 STie$$

SS = Start-up success, including sales (the sales compared with competitor and the sales growth respectively), profit (the profit compared with competitor and the profit growth respectively), and entrepreneur's success expectation. All are entered in separate regression equations.

∞_0 = Constant

Workexp= Owner manager's years of work experience prior to start-up (Control)

Indexp = Owner manager's years of industrial experience prior to start-up (Control)

Manexp = Owner manager's years of management experience prior to start-up (Control)

Indtype = Type of industry of the firm (Control)

Edu = Education level of the owner manager (Control)

STie = Number of strong ties (Size of strong tie network)

Table 5.8 Statistics for hypothesis H1

Variables	Sales growth		Sales vs comp.		Profit growth		Profit vs competitor		Owner expectation	
	β	t	B	t	β	T	β	t	β	t
(Constant)		3.679***		3.804***		5.674***		4.833***		4.745***
Workexp	.224	1.302	.169	.928	-.081	-.470	-.005	-.029	.183	1.053
Indexp	-.111	-1.026	.123	1.063	.068	.596	.081	.697	.228	2.054
Manexp	-.147	-.829	-.110	-.586	.019	.110	-.017	-.088	-.170	-.952
Indtype	-.016	-.138	.019	.159	-.095	-.808	-.065	-.535	-.167	-1.451
Edu	-.057	-.501	-.105	-.869	-.121	-1.009	-.049	-.399	-.105	-.905
STie	.304	**2.775**	.104	.901	.141	1.229	.135	1.158	.047	.423
R	.358		.246		.218		.173		.327	
R^2	.128		.061		.047		.030		.107	
F	**1.883**[†]		.795		.630		.383		1.514	
Std error of estimate	1.470		1.580		1.392		1.299		1.459	
Partial Corr.	.302		.104		.140		.133		.048	
Part Corr.	.295		.102		.138		.132		.046	

† Significant < 0.1   * Significant < 0.05   ** Significant <0.01   * Significant <0.001**

Model assessment. By simultaneously accounting for the effects of control variables in the mathematical model, the size of strong tie network, STie, is found to have a significant F at $p < 0.1$ (i.e .90% confidence level with positive relationship on one dependent variable, the sales growth. No statistitcal significant F is found in the other multi-regression equations, which suggests that other than sales growth, the size of strong tie network does not have statistical significant effect on start-up success given the sample size of this study.

Variable contribution. As shown in table 5.8, the size of strong tie network has a β (beta) coefficient of 0.305 ($\rho<.01$) in the regression equation on the sales growth, which suggests that under $\rho<0.1$ significance of the multiple regression equation F, the size of strong tie network makes a unique and individual contribution to the sales growth of the start-up firms, after accounting for the effects of control variables stipulated in the model. The size of strong tie network, however, is found no statistical significant contribution to the other start-up success measures. Nevertheless, since the sample size is small (N=89, which is just higher than what is needed for medium sized effect with beta=0.3). Small sample size is statistically not adequate to detect small effect of beta <0.3 (Cohen, 1988). It can ben seen that beta for sales vs competitor is 0.104; beta for profit growth is 0.141 and beta for profit vs competitor is 0.135. In order to detect such small size effect at 0.1 level beta, the size of data required is much larger. Thus, it is possible that statistical non significant result may be due to the small the sample size as statistical effects from these small effect variables cannot be detected. As for ower expectation, the beta is 0.047 and partial correlation coefficient is 0.048 may suggest a trival effect.

Test of hypothesis H1a: Effect of the support from strong tie network on start-up success

Mathematical model for hypothesis H1a

$SS = \infty_0 + \beta_1 Workexp + \beta_2 Indexp + \beta_3 Manexp + \beta_4 Indtype + \beta_5 Edu + \beta_6 STsupp$

SS   = Start-up success, including sales (the sales compared with competitor and the sales growth respectively), profit (the profit compared with competitor and the profit growth respectively), and entrepreneur's success expectation. All are entered in separate regression equations.

∞_0 = Constant

Workexp= Owner manager's years of work experience prior to start-up (Control)

Indexp = Owner manager's years of industrial experience prior to start-up (Control)

Manexp = Owner manager's years of management experience prior to start-up (Control)

Indtype = Type of industry of the firm (Control)

Edu = Education level of the owner manager (Control)

STsupp = Usefulness of the support from strong ties

Table 5.9 Statistics for hypothesis H1a

Variables	Sales growth		Sales vs comp.		Profit growth		Profit vs competitor		Owner expectation	
	β	t	B	t	β	t	β	t	β	t
(Constant)		4.107***		3.869***		4.893***		4.619***		4.066***
Workexp	.109	0.591	.150	.843	-.066	-0.389	.037	0.194	.188	1.027
Indexp	-.043	-0.344	.181	1.464	.120	0.964	.091	0.692	.158	1.226
Manexp	-.007	-0.036	.040	.216	.030	0.175	-.030	-0.150	-.191	-.997
Indtype	-.047	-0.373	.054	.444	-.104	-0.864	-.101	-0.768	-.186	-1.478
Edu	-.249	-2.025*	-.264	-2.199*	-.263	-2.191*	-.151	-1.163	-.172	-1.399
STsupp	.208	1.766 †	.113	.986	.311	**2.705****	.096	0.777	.173	1.461
R	.331		.428		.400		.213		.344	
R²	.110		.183		.160		.045		.119	
F	**1.357**†		**2.385***		**2.063** †		1.292		1.456	
Std error of estimate	1.451		1.452		1.335		1.292		1.485	
Partial Corr.	.212		.122		.318		.097		.178	
Part Corr.	.205		.111		.307		.095		.170	

† Significant < 0.1   * Significant < 0.05   ** Significant < 0.01   * Significant < 0.001**

Model assessment. By simultaneously accounting for the effects of the control variables in the mathematical model, the support from strong ties, STsupp, is found to have a significant ($p < 0.05$) regression equation model F on the sales vs competitor, and it has a significant ($\rho<0.1$) regression equation model F on the sales growth and the profit growth respectively. No statistical significant F of the regression equations are found for the other dependent variables.

Variable contribution. As shown in table 5.9, the support of strong ties has a β (beta) coefficient of 0.208 in the regression equation of the sales growth, but the statistical significance of t is at p <0.1 which suggests that under this ρ< 0.1 regression equation of the sales growth model, the support from strong ties makes a statistical significant individual contribution to the sales growth of the start-up firms after accounting for the effects of the control variables stipulated in the model. STsupp has a β coefficient of 0.311 (ρ<0.1) which suggests that after accounting for the effects of the control variables stipulated in the model, with ρ< 0.1 regression equation model of sales growth, the support from strong tie network makes a statistical significant individual contribution to the profit growth of the start-up firms. As for the model Sales vs Competitor, the model has a significant F but the beta value is found not statistically significant. The beta value for STsupp is 0.113 which may not indicate absolutely no effect. There is a possibility that due to small sample size of the study, the small effect from STsupp may not be statistifically realized.

Test of hypothesis H1b: Effect of trustworthy of strong tie network on start-up success

Mathematical model for hypothesis H1b

$SS = \infty_0 + \beta_1 Workexp + \beta_2 Indexp + \beta_3 Manexp + \beta_4 Indtype + \beta_5 Edu + \beta_6 STrust$

SS = Start-up success, including sales (the sales compared with competitor and the sales growth respectively), profit (the profit compared with competitor and the profit growth respectively), and owner's success expectation. All are entered in separate regression equations.

∞_0 = Constant

Workexp= Owner manager's years of work experience prior to start-up(Control)

Indexp = Owner manager's years of industrial experience prior to start-up(Control)

Manexp = Owner manager's years of management experience prior to start-up (Control)

Indtype = Type of industry of the firm (Control)

Edu = Education level of the owner manager (Control)

STrust = Level of trustworthy of strong tie network

Table 5.10 Statistics for hypothesis H1b

Variables	Sales Growth		Sales vs comp.		Profit Growth		Profit vs Competitor		Owner Expectation	
	β	t	B	t	β	t	β	t	β	t
(Constant)		3.594**		2.918**		4.440***		3.516**		2.452*
Workexp	.077	0.438	.029	0.170	-.152	-0.921	-.038	-0.216	.236	1.399
Indexp	-.104	-0.835	.183	1.456	.117	0.943	.016	0.122	.211	1.709
Manexp	.086	0.489	.133	0.765	.174	1.067	.152	0.852	-.138	-.804
Indtype	-.010	-0.083*	.055	0.466	-.072	-0.616	-.041	-0.338	-.158	-1.375
Edu	-.168	-1.398	-.200	-1.687	-.202	-1.690	-.102	-0.824	-.074	-.632
STrust	-.027	-0.227	.037	0.312	-.018	-0.150	.033	0.267	.123	1.052
R	.231		.343		.263		.163		.325	
R²	.054		.118		.069		.027		.106	
F	.698		1.583		.903		.327		1.438	
Std error of estimate	1.474		1.517		1.401		1.299		1.488	
Partial corr.	-.026		.037		-.018		.031		.122	
Part corr.	-.026		.035		-.017		,031		.122	

† Significant < 0.1   * Significant < 0.05   ** Significant <0.01   * Significant <0.001**

Model assessment. After accounting for the effects of the control variables, none of the regression equations are found to be statistically significant. Trustworthy of strong ties network, STrust, fails to form any statistical significant regression model in the sample of the study.

Variable contribution. After accounting for the effects the control variables, the relational construct trustworthy of strong tie network, is not found statistically making any unique or individual contribution to the start-up success of firms. For the model of ower expectation, since the partial correlation coefficient is 0.122, it cannot rule out a possibility that there may be a small effect not observable due to the smallness of the sample size.

Test of hypothesis 2: Effect of the size of weak tie network on start-up success
Mathematical model for Hypothesis H2

$SS = \infty_0 + \beta_1 Workexp + \beta_2 Indexp + \beta_3 Manexp + \beta_4 Indtype + \beta_5 Edu + \beta_6 WTie$

SS = Start-up Success, including sales (the sales compared with competitor and the sales growth respectively), profit (the profit compared with competitor and the profit growth respectively), and owner's success expectation. All are entered in separate regression equations.

∞_0 = Constant

Workexp= Owner manager's years of work experience prior to start-up(Control)

Indexp = Owner manager's years of industrial experience prior to start-up(Control)

Manexp = Owner manager's years of management experience prior to start-up (Control)

Indtype = Type of industry of the firm (Control)

Edu = Education level of the owner manager (Control)

WTie = Number of weak ties (Size of weak tie network)

Table 5.11 Statistics for hypothesis H2

Variables	Sales Growth		Sales vs comp.		Profit Growth		Profit vs Competitor		Owner Expectation	
	B	**t**	**β**	**t**	**β**	**t**	**β**	**t**	**β**	**t**
(Constant)		4.317***		4.167***		5.990***		5.060***		4.973***
Workexp	.149	.825	.114	.627	-.105	-.611	.029	0.159	.267	1.571
Indexp	-.132	-1.150	.148	1.270	.103	.897	.085	0.721	.216	1.949
Manexp	-.012	-.065	-.026	-.141	.070	.407	-.046	-0.246	-.226	-1.325
Indtype	.040	.334	.040	.329	-.077	-.643	-.044	-0.360	-.169	-1.476
Edu	-.091	-.767	-.142	-1.177	-.162	-1.357	-.073	-0.595	-.103	-.902
WTie	-.055	-.470	.045	.385	.124	1.047	.065	0.541	-.052	-.463
R	.208		.261		.213		.130		.347	
R^2	.043		.068		.045		.017		.120	
F	.581		.898		.600		.215		1.754	
Std error of estimate	1.536		1.599		1.438		1.324		1.440	
Partial Corr.	-.053		.045		.119		.062		-.053	
Part Corr.	-.052		.043		.117		.062		-.049	

†Significant < 0.1   * Significant < 0.05   ** Significant <0.01   *** Significant <0.001

Model assessment. None of the regression equations has significant F. The size of weak tie network, WTie, fails to form any statistical significant regression model from the sample of the study.

Variable contribution. *A*fter accounting for the effects the control variables, the size of weak tie network, WTie, is not found statistically making make any unique or individual contribution to start-up firm success. For the model of sales growth, the partial correlation coefficient is 0.119. It cannot rule out a possibility that there is a small effect that is observable due to the small sample size.

Test of hypothesis H2a: Effect of the support from weak ties on start-up success

Mathematical model for Hypothesis H2a

$$SS = \infty_0 + \beta_1 Workexp + \beta_2 Indexp + \beta_3 Manexp + \beta_4 Indtype + \beta_5 Edu + \beta_6 WTsupp$$

SS   = Start-up Success, including sales (the sales compared with competitor and the sales growth respectively), profit (the profit compared with competitor and the profit growth respectively), and owner's success expectation. All are entered in separate regression equations.

∞_0 = Constant

Workexp= Owner manager's years of work experience prior to start-up(Control)

Indexp = Owner manager's years of industrial experience prior to start-up(Control)

Manexp = Owner manager's years of management experience prior to start-up (Control)

Indtype = Type of industry of the firm (Control)

Edu   = Education level of the owner manager (Control)

WTsupp = Usefulness of the support from weak tie newtork

Table 5.12 Statistics for hypothesis H2a

Variables	Sales Growth		Sales vs comp.		Profit Growth		Profit vs Competitor		Owner Expectation	
	β	t	β	t	β	t	β	t	β	t
(Constant)		2.925**		2.754**		4.423***		4.096***		3.189**
Workexp	.120	0.634	.039	.215	-.041	-.216	.078	.385	.240	1.251
Indexp	.005	0.043	.323	2.775	.102	.819	.068	.539	.159	1.298
Manexp	-.105	-0.553	-.031	-.166	.066	.352	-.022	-.110	-.226	-1.167
Indtype	.013	0.105	.071	.588	-.036	-.280	-.019	-.141	-.135	-1.076
Edu	-.215	-1.817 †	-.204	-1.751 †	-.190	-1.509	-.098	-.764	-.126	-1.036
WTsupp	.274	**2.408***	.189	**1.689**†	.073	0.614	-.033	-.266	.153	1.305
R	.374		.439		.228		.145		.323	
R²	.140		.193		.052		.021		.104	
F	**1.867**†		**2.663***		.620		.239		1.322	
Std error of estimate	1.425		1.463		1.389		1.283		1.460	
Partial corr.	.278		.202		.074		-.033		.156	
Part corr.	.269		.185		.073		-.032		.150	

† Significant < 0.1   * Significant < 0.05   ** Significant <0.01   *** Significant <0.001

Model assessment. By simultaneously accounting for the effects of the control variables in the mathematical model, the support from strong tie network, WTsupp, is found to have a significant F ($\rho<0.1$) on the regression equation model of the sales growth, and has a significant F (p < 0.05) regression equation model on the sales vs competitor. No significant F is found for other multi-regression equations.

Variable contribution. As shown in table 12, the support of weak tie network, WTsupp, has a β (beta) coefficient of 0.274 ($\rho<0.05$) in the regression equation of the sales growth, which suggests that under $\rho<0.1$ significance regression equation F of the sales growth, the support from weak tie network makes a statistical significant individual contribution to the sales growth of the start-up firms after accounting for the effects of the control variables in the model. WTsupp has a beta coefficient of 0.189 in a statistical significant regression mode of the sales growth vs competitor, but the **t** significance is p <0.1. This suggests that the support from the weak tie network makes a statistical $\rho<0.1$ significant individual contribution to the sales growth vs competitor construct of the start-up firms after accounting for the effects of the control variables stipulated in the model.

Test of hypothesis H2b: Effect of trustworthy of the weak tie network on start-up success

Mathematical model for Hypothesis H2b

$$SS = \infty_0 + \beta_1 Workexp + \beta_2 Indexp + \beta_3 Manexp + \beta_4 Indtype + \beta_5 Edu + \beta_6 WTrust$$

SS = Start-up success, including sales (the sales compared with competitor and the sales growth respectively), profit (the profit compared with competitor and the profit growth respectively), and owner's success expectation. All are entered in separate regression equations.

∞_0 = Constant

Workexp = Owner manager's years of work experience prior to start-up(Control)

Indexp = Owner manager's years of industrial experience prior to start-up(Control)

Manexp = Owner manager's years of management experience prior to start-up (Control)

Indtype = Type of industry of the firm (Control)

Edu = Education level of the owner manager (Control)

WTrust = Level of trustworthy of weak tie network

Table 5.13 Statistics for hypothesis H2b

Variables	Sales Growth		Sales vs comp.		Profit Growth		Profit vs Competitor		Owner Expectation	
	β	t	B	t	β	t	β	t	β	t
(Constant)		3.782***		3.417**		5.868***		4.267***		3.986***
Workexp	.128	.730	.106	.604	-.080	-0.487	.044	.250	.224	1.330
Indexp	-.103	-.891	.166	1.427	.059	0.521	.057	.489	.216	1.920
Manexp	-.042	-.234	-.029	-.162	.042	0.254	-.037	-.204	-.219	-1.269
Indtype	.017	.146	.052	.441	-.037	-0.323	-.017	-.144	-.159	-1.409
Edu	-.120	-1.010	-.132	-1.112	-.102	-0.880	-.035	-.287	-.091	-.792
Wtrust	-.032	-.279	-.029	-.246	-.226	$-1.978^{\dagger}$	-.079	-.670	-.033	-.294
R	.192		.268		.274		.122		.323	
R^2	.037		.072		.075		.015		.104	
F	.504		.984		1.056		.195		1.517	
Std error of estimate	1.490		1.575		1.400		1.311		1.462	
Partial corr.	-.031		-.028		-.219		-.076		-.033	
Part corr.	-.031		-.027		-.215		-.076		-.032	

† Significant < 0.1   * Significant < 0.05   ** Significant <0.01   *** Significant <0.001

Model assessment. None of the regression equations is found to have significant F. The trust worthiness of weak tie network, WTrust, fails to form a statistical significant regression model under the sample size of the study.

Variable contribution. After accounting for the effects the control variables, the relational construct, trustworthy of weak tie network, is not found to have any unique, statistical significant individual contribution to start-up firm success. In the profit growth model, the regression equation is statistically not significant but the beta value is -0.219 significant at $\rho<0.1$. Since the sample size is small, there may be a possibility that due to the smallness of sample size, there may be a small negative effect of the Wtrust not detectable.

Test of hypothesis H3: Effect of network diversity on start-up success

Mathematical model for Hypothesis H3

$$SS = \infty_0 + \beta_1 Workexp + \beta_2 Indexp + \beta_3 Manexp + \beta_4 Indtype + \beta_5 Edu + \beta_6 NDiv$$

SS   = Start-up success, including sales (the sales compared with competitor and the sales growth respectively), profit (the profit compared with competitor and the profit growth respectively), and owner's success expectation. All are entered in separate regression equations.

∞_0 = Constant

Workexp= Owner manager's years of work experience prior to start-up(Control)

Indexp   = Owner manager's years of industrial experience prior to start-up(Control)

Manexp   = Owner manager's years of management experience prior to start-up(Control)

Indtype   = Type of industry of the firm (Control)

Edu   = Education level of the owner manager (Control)

NDiv   = Diversity of external networks

Table 5.14 Statistics for hypothesis H3

Variables	Sales Growth		Sales vs comp.		Profit Growth		Profit vs Competitor		Owner Expectation	
	β	t	β	t	β	t	β	t	β	t
(Constant)		3.334**		3.747***		5.482***		4.215***		3.988***
Workexp	.205	1.229	.136	.779	-.089	-0.532	.045	.258	.257	1.586
Indexp	-.123	-1.144	.151	1.326	.095	0.834	.080	.702	.229	2.157*
Manexp	-.025	-.148	-.029	-.160	.095	0.571	-.003	-.017	-.208	-1.270
Indtype	.010	.093	.055	.472	-.050	-0.428	-.034	-.292	-.182	-1.675
Edu	-.161	-1.421	-.128	-1.076	-.139	-1.163	-.088	-.739	-.145	-1.307
NDiv	.294	**2.694**	.026	.226	.019	0.167	.182	1.589	.255	**2.398***
R	.350		.260		.174		.205		.405	
R^2	.122		.068		.030		.042		.164	
F	**1.860†**		.932		.412		.570		**2.583***	
Std error of estimate	1.450		1.580		1.425		1.290		1.403	
Partial corr.	.288		.026		.019		.177		.260	
Part corr.	.282		.025		.018		.176		.247	

† Significant < 0.1   * Significant < 0.05   ** Significant < 0.01   *** Significant < 0.001

Model assessment. By simultaneously accounting for the effects of all the control variables in the mathematical model, the external network diversity, NDiv, is found to have a significant $p < 0.1$ F regression model of the sales growth and a significant ρ<0.05 regression model of the owner's expectation respectively. No significant F is found for all other dependent variables from the sample.

Variable contribution. As shown in table 5.14, network diversity NDiv has a significant beta coefficient of 0.294 (ρ<.01) in the regression equation on the sales growth, which suggests that under a significant F (ρ<0.1) regression equations for the sales growth, the network diversity makes a statistical significant unique and individual contribution to the sales growth of the start-up firms after accounting for the effects of the control variables in the model. NDiv has a beta coefficient of 0.255 (ρ<0.05) in the regression model of the owner's expectation (p<0.05), which suggests that network diversity makes a statistical significant unique and individual contribution to the owner's expectation of success after accounting for the effects of control variables in the model from the sample.

Full model of first part of research question – direct relationship model:

All independent variables are entered into a multiple regression equation to see the overall effect of external networks (social capital) on start-up success expressed in the figure 2.2 in Chapter 3 is conducted.

The mathematical model including all independent variables is expressed as follows

$$SS = \infty_0 + \beta_1 Workexp + \beta_2 Indexp + \beta_3 Manexp + \beta_4 Indtype + \beta_5 Edu + \beta_6 STie +$$
$$\beta_7 STsupp + \beta_8 STrust + \beta_9 WTie + \beta_{10} WTsupp + \beta_{11} WTrust + \beta_{12} NDiv$$

SS   = Start-up Success, including sales (the sales compared with competitor and the sales growth respectively), profit (the profit compared with competitor and the profit growth respectively), and owner's success expectation. All are entered in separate regression equations.

∞_0 = Constant

Control variables

Workexp   = Owner manager's years of work experience (Control)

Indexp   = Owner manager's years of industrial experience (Control)

Manexp   = Owner manager's years of management experience (Control)

Indtype   = Type of industry of the firm (Control)

Edu   = Education level of the owner manager (Control)

Independent variables

STie   = Number of strong ties (Size of strong tie network)

STsupp   = Level of support from strong tie network

STrust   = Trustworthy of strong tie network

WTie   = Number of weak ties (Size of weak tie network)

WTsupp   = Level of support from weak tie network

WTrust   = Trustworthy of the weak tie network

NDiv   = Network Diversity

Table 5.15 Effect of external network (social capital) on start-up success

Variables	Sales Growth		Sales vs comp.		Profit Growth		Profit vs Competitor		Owner Expectation	
	β	t	B	t	β	t	β	t	β	t
(Constant)		1.850†		1.782 †		3.778***		3.766***		1.648
Workexp	-.017	-.084	-.050	-.217	-.140	-.682	-.260	-1.078	.203	.909
Indexp	-.093	-.688	.097	.633	-.082	-.549	-.064	-.415	.119	.768
Manexp	.150	.690	.310	1.277	.157	.739	.420	1.672	-.078	-.336
Indtype	.010	.072	.093	.613	-.150	-1.067	-.084	-.528	-.133	-.882
Edu	-.327	-2.449*	-.296	-1.983†	-.268	-1.838†	-.240	-1.530	-.205	-1.359
STie	**.255**	**2.004†**	.037	.265	.026	.189	.038	.258	.014	.096
STsupp	.095	.782	.043	.317	.386	2.892**	.136	.956	.141	1.018
STrust	-.072	-.543	.140	.944	-.010	-.065	-.020	-.128	.028	.185
WTie	-.002	-.014	.117	.791	.144	.993	.270	1.719	-.069	-.466
WTsupp	**.303**	**2.453***	.210	1.518	.008	.058	-.093	-.636	.057	.403
WTrust	-.057	-.425	-.098	-.629	-.202	-1.371	-.160	-.982	-.060	-.394
NDiv	**.319**	**2.427***	-.023	-.152	-.009	-.062	.134	.875	.295	2.034*
R	.614		.506		.527		.411		.459	
R²	.377		.256		.271		.169		.201	
F	**2.468***		1.350		1.490		.794		1.087	
Std error of estimate	1.314		1.471		1.322		1.264		1.541	

† Significant < 0.1   * Significant < 0.05   ** Significant <0.01   * Significant <0.001**

Full model assessment: By simultaneously accounting for all the effects of the independent network variables and the control variables, only one regression model, the sales growth, is found to have statistical significant F ($\rho<0.05$). In this regression model of sales growth, three network constructs, the size of strong tie network STie ($\rho=0.051$), the support from weak tie network WTsupp *($\rho<0.018$)* and the network diversity NDiv ($\rho<0.019$) show 0.05 level of significant contribution to the full model.

Variable contribution. As shown in table 5.15, only the sales growth model has a significant regression equation. In this model, STie has a moderate significant beta coefficient of 0.294 ($\rho=0.051$) which suggests that the size of strong tie network makes a moderate significant contribution to the sales growth of the start-up firms after accounting for the effects of the control variables and the independent variables

in the model. WTsupp has a beta coefficient of 0.303 ($\rho<0.05$) which suggests that the support from weak tie network makes a significant unique and individual contribution to the sales growth of the start-up firms after accounting for the effects of the control variables and the independent variables in the model. NDiv has a beta coefficient of 0.391 ($\rho<0.05$) which suggests that network diversity makes a statistical significant unique and individual contribution to the sales growth of the start-up firms after accounting for the effects of the independent variables and the control variables in the model.

5.3.3 Hypotheses test – test the moderation effect

Hierarchical multiple regression approach is adopted to test the moderation hypotheses. In hierarchical multiple regression, the variables are entered into two separate blocks. The first block of the variables (Model A) goes without the corresponding multiplicative moderating term while the second block (Model B) goes with the multiplicative term.

Test of hypothesis H1c: Networking capacity constructs moderate the relationship between the size of strong tie network and the start-up success

Mathematical model for Hypothesis H1c

Model A: SS $= \infty_0 + \beta_1 Workexp + \beta_2 Indexp + \beta_3 Manexp + \beta_4 Indtype + \beta_5 Edu + \beta_6 STie + \beta 7NCV$

Model B: SS $= \infty_0 + \beta_1 Workexp + \beta_2 Indexp + \beta_3 Manexp + \beta_4 Indtype + \beta_5 Edu + \beta_6 STie + \beta_7 NCV + \boldsymbol{\beta_8 Mod}$

SS   = Start-up success -- sales growth (the result of the analysis in previous sections suggests that only the sales growth has significant relationship between STtie with start-up success constructs. Thus the sales growth is the only dependent variable used to test this hypothesis)

∞_0 = Constant

Workexp   = Owner manager's years of work experience prior to start-up (Control)

Indexp   = Owner manager's years of industrial experience prior to start-up (Control)

Manexp   = Owner manager's years of management experience prior to start-up (Control)

Indtype   = Type of industry of the firm (Control)

Edu   = Education level of the owner manager (Control)

STie   = Number of strong ties (Size of strong tie network)

NCV   = Networking capability variables -- including S perception (S = social)
             S adaptation,   S expression, S impression, and Organiz (coordination
             and management skills)

Mod   = Moderating multiplicative terms: STie x S perception; STie x S
             adaptation; STie x S expression; STie x S impression; STie x Organiz

Table 5.16: Moderating effect with dependent variable: Sales growth

	Model 1		Model 2		Model 3		Model 4		Model 5	
	β	T	β	t	β	t	β	t	β	t
(Constant)		2.020*		2.942**		3.761***		3.013**		2.025**
Workexp	.219	1.261	.171	.943	.254	1.463	.247	1.398	.264	1.579
Indexp	-.126	-1.139	-.045	-.389	-.124	-1.134	-.122	-1.098	-.177	-1.627
Manexp	-.142	-.789	-.122	-.671	-.162	-.913	-.147	-.805	-.185	-1.069
Indtype	-.023	-.201	-.012	-.106	-.025	-.220	.002	.020	-.041	-.376
Edu	-.059	-.507	-.090	-.754	-.054	-.473	-.051	-.439	-.066	-.598
STie	.298	2.320*	.297	2.470*	.320	2.866**	.275	2.403*	**.317**	**2.981**
S perception	.085	.724								
S Adapt			.003	.025						
S Expression					-.139	-1.276				
S Impression							.013	.110		
Organiz									.173	1.610
STie x S perception	-.033	-.257								
STie x S Adapt			-.068	-.602						
STie x S Expression					.073	.663				
STie x S Impression							.119	.985		
STie x Organiz									**-.231**	**-2.196***
Model A (w/out Mod)										
R	.369		.327		.308		.362		.390	
R²	.136		.107		.145		.131		.152	
F	1.715		1.251		1.837		1.617		1.947[†]	
Model B (With Mod)										
R	.307		.334		.387		.377		.451	
R²	.137		.112		.150		.142		.203	
Change of R²	.001		.005		.005		.011		.051*	
F	1.491		1.131		1.651		1.535		**2.392***	
Partial Correlation	-.030		-.071		.076		.114		-.246	

† Significant < 0.1   * Significant < 0.05   ** Significant <0.01   *** Significant <0.001

Model assessment. By simultaneously accounting for the effects of the control

variables, the independent variable and specific moderating variables in the

mathematical model, the regression model 5 is found to have a significant ($p < 0.05$)

F. The moderation effect of STie x Organiz is found to be significant at $\rho<0.05$ level.

No statistical significant F is found in the other multi-regression equations, which

suggests that other than STie x ORganiz, the other moderating terms are not found to have statistical significant moderation effect on the relationship between the size of strong tie network and the sales growth of start-up firms from the sample of the study.

Variable contribution. As shown in table 5.16, the moderating term STie x Organiz has a beta coefficient of -.231 ($\rho<.01$) in the regression equation of Model 5, which suggests that the interaction of the size of strong tie network and the entrepreneur's organization and coordination skills makes a unique negative contribution to the sales growth of the start-up firms after accounting for the effects of the other variables of the model. Other than STie x Organiz, no other moderating variable has any statistical significant effect on the sales growth of the start-up firms from the sample.

Test of hypothesis H2c: networking capability variables moderate the relationship between the size of weak tie network and the start-up success

The hypotheses for the moderation effect of the networking capability variables on selected network constructs are based on the assumption that there exist statistical significant relationship between the network construct variables and the start-up success variables so that the moderation effect can occur and therefore be proposed. Without such significant relationship between the network construct variables and the start-up success variables, the networking capability variables have no object to test for any moderation effect. Thus, a confirmative result of the hypothesis 2 (which suggests a significant linear relationship between the size of weak tie network and the start-up success) is a prerequisite condition for the hypothesis 2c. Since hypothesis 2 fails in the above regression test, there is no ground for testing hypothesis 2c. The hypothesis 2c is therefore not valid in this study.

Test of hypothesis H3c: Networking capability variables moderate the relationship between the network diversity and the start-up success

Mathematical model for Hypothesis H3c

Model A: $SS = \infty_0 + \beta_1 Workexp + \beta_2 Indexp + \beta_3 Manexp + \beta_4 Indtype + \beta_5 Edu + \beta_6 NDiv + \beta_7 NCV$

Model B: $SS = \infty_0 + \beta_1 Workexp + \beta_2 Indexp + \beta_3 Manexp + \beta_4 Indtype + \beta_5 Edu + \beta_6 NDiv + \beta_7 NCV + \mathbf{\beta_8 Mod}$

SS	=	Start-up success – sales growth and owner's success expectation respectively. (The result of the analysis in the previous section suggests that only these two regression models have significant F. Thus, only these two independent variables are tested). The sales growth and the owner's success expectation are entered into separate regression equations.
∞_0	=	Constant
Workexp	=	Owner manager's years of work experience prior to start-up(Control)
Indexp	=	Owner manager's years of industrial experience prior to start-up (Control)
Manexp	=	Owner manager's years of management experience prior to start-up (Control)
Indtype	=	Type of industry of the firm (Control)
Edu	=	Education level of the owner manager (Control)
NDiv	=	Network diversity (independent variable)
NCV	=	Networking capability variables -- including S perception (S = social), S adaptation, S expression, S impression, and Organiz (Coordination and management skills)
Mod	=	Moderating multiplicative terms: NDiv x S perception ; NDiv x S adaptation ; NDiv x S expression; NDiv x S impression; NDiv x Organiz

Table 5.17 Statistics for hypothesis 3c with sales growth as dependent variable

Variables	Model 1		Model 2		Model 3		Model 4		Model 5	
	Beta	**T**	**Beta**	**t**	**Beta**	**t**	**Beta**	**t**	**Beta**	**t**
(Constant)		1.211		1.869†		3.691***		2.499*		2.288*
Workexp	.180	1.098	.157	.937	.198	1.153	.189	1.111	.201	1.197
Indexp	-.153	-1.437	-.032	-.279	-.128	-1.193	-.138	-1.250	-.138	-1.228
Manexp	.006	.037	.020	.119	-.019	-.115	.002	.012	-.038	-.222
Indtype	-.017	-.153	-.013	-.116	-.001	-.009	.007	.063	.009	.080
Edu	-.178	-1.590	-.213	-1.858	-.175	-1.543	-.161	-1.401	-.154	-1.343
NDiv	.351	3.141**	.390	3.413**	.300	2.754**	.295	2.661**	.274	2.379*
S perception	.176	1.633								
S Adapt			.112	.994						
S Expression					-.142	-1.337				
S Impression							.104	.932		
Organiz									.082	.715
NDiv x S perception	-.164	-1.470								
NDiv x S Adapt			-.140	-1.172						
NDiv x S Expression					.124	1.144				
NDiv x S Impression							-.016	-.144		
NDiv x Organiz									-.014	-.129
Model A(w/out Mod)										
R	.391		.393		.374		.364		.359	
R²	.153		.152		.140		.133		.129	
F	2.010†		1.981†		1.838†		1.706		1.665	
Model B (with Mod)										
R	.419		.472		.393		.365		.359	
R²	.176		.170		.154		.133		.129	
F	2.055†		1.494†		1.778†		1.477		1.440	
Partial Correlation	-.165		-.134		.128		-.016		-.015	

† Significant < 0.1   * Significant < 0.05   ** Significant <0.01   *** Significant <0.001

Model assessment. By simultaneously accounting for the effects of the control variables, the independent variable and specific moderating variables in the mathematical model, three sets of F significant regression equations (model 1, model 2 and model 3) at significance level $\rho < 0.1$ are found on the sales growth.

Variable contribution. As shown in table 5.17, none of the moderating multiplicative terms has any significant Beta value, which suggests that the interaction of the networking capability of the entrepreneurs and the network diversity is not found to have any statistical detectable effect on the success of the start-up firms from the given sample of the study.   It can be seen that the partial correlation of social perception (-0.165) and social adaptation (-0.134) are negative, and social expression (0.128) is poisible, and all have the estimate size >0.1. There is a possibility that if

the sample size is big enough (N=782), the small effects from these three variables may be realized, but the first two moderation effects may be in opposite direction.

Table 5.18 Statistics for hypothesis H3c with owner success expectation as dependent variable

	Model 1 Beta	Model 1 t	Model 2 Beta	Model 2 t	Model 3 Beta	Model 3 t	Model 4 Beta	Model 4 t	Model 5 Beta	Model 5 t
(Constant)		2.135*		2.135*		3.563**		3.097**		2.362*
Workexp	.243	1.494	.243	1.494	.305	1.806†	.247	1.495	.258	1.596
Indexp	.214	1.986†	.214	1.986*	.226	2.111*	.219	2.019*	.188	1.701†
Manexp	-.207	-1.245	-.207	-1.245	-.226	-1.365	-.191	-1.139	-.247	-1.492
Indtype	-.189	-1.723	-.189	-1.723†	-.184	-1.682†	-.192	-1.748†	-.180	-1.657
Edu	-.141	-1.265	-.141	-1.265	-.131	-1.172	-.153	-1.367	-.135	-1.224
NDiv	.248	2.226*	.248	2.226**	.262	2.439*	.266	2.463*	.209	1.882†
S perception	.105	.973								
S Adapt			.105	.973						
S Expression					-.062	-.586				
S Impression							.101	.921		
Organiz									.173	1.543
NDiv x S perception	.037	.335								
NDiv x S Adapt			-.081	.335						
NDiv x S Expression					-.093	-.866				
NDiv x S Impression							-.082	-.756		
NDiv x Organiz									.036	.336
Model A (w/out Mod)										
R	.425		.435		.410		.417		.434	
R²	.180		.189		.168		.174		.188	
F	2.419*		2.497*		2.255*		2.317*		2.581*	
Model B (With Mod)										
R	.426		.441		.42		.424		.435	
R²	.181		.194		.176		.180		.189	
F	2.106*		2.228*		2.060*		.2.088*		2.247*	
Partial Correlation	.038		-.079		-.098		-.086		.038	

† Significant < 0.1   * Significant < 0.05   ** Significant <0.01   *** Significant <0.001

Model assessment. By simultaneously accounting for the effects of the control variables, the independent variable and specific moderating variables in the mathematical model, all regression models with the expected success as dependent variables are found to have significant F ($p<0.05$).

Variable contribution. As shown in table 5.18, none of the moderating multiplicative terms has any statistical significant beta value from the sample, which suggests that the interaction of the networking capability of the entrepreneurs and the network diversity is not found to have any statistical detabale effect on the success of start-up firms from the given sample size. Since the partial correlations of all moderation variables are smaller than 0.1, even if the sample size is large, the estimate effects, if any, are trivial.

5.4 Summary

In this chapter, the hypotheses developed in Chapter 3 are tested using the methodology outlined in Chapter 4 and Chapter 5. The hypotheses developed are trying to answer a broad research question that initial external network resources (or social capital) are positively associated with the success of small business start-up, and that the networking capability of the entrepreneur can moderate the impact of selected initial network structures on the performance of the start-up firms. Based on the results of the above statistical analysis, the first part of the research question offers a partial affirmative positive answer. The second part of the research question about the moderation effect of the networking capability variables has no affirmative answer other than one case, i.e. the interaction of the size of strong tie network and the organization and coordination capability has shown significant negative effect on the sale growth.

Chapter 6   General discussion

The purpose of this chapter is to summarize the results of the study, explain those results, discuss the implications, describe the limitation and suggest possible future research directions. This chapter is organized in a way that it first provides a summary of the results presented in Chapter 5. Second, the results are discussed in the context of the current academic literature. Third, the relevance and implications to small business start-up and the entrepreneurial networking are presented and discussed, followed by the fourth, the limitation discussions. The last section suggests three possible directions for future research.

6.1 Discussion of the findings

To main purpose of this research is to verify the prescription of the network theory of social capital in the context of start-up success of small business. While social capital has been applied to a variety of contexts, the application of social capital in the context of start-up success of small business have not been extensive (Anderson & Jack, 2002) acknowledging that there are some entrepreneurship literature highlight the significance of social networks in the creation and the survival of new ventures (Bamford *et al.*, 2006; Florin *et al.*, 2003; Liao & Welsch, 2005).

External networks are perceived to be important for the success of small business start-up because they open up entrepreneurial possibilities, provide access to useful, reliable, exclusive, less redundant information (Brüderl & Preisendörfer, 1998). The social capital approach to start-up success suggests that personal networks of entrepreneurs of new ventures allow the entrepreneurs to access resources that are not possessed internally (Ostgaard and Birley 1994), and these resources can contribute to the success of the start-up firms. This research examines the positive relationship between the external networks and the success of start-up

firms by focusing on the initial network conditions that have not extensively been evaluated in previous studies.

To address the research question, the regression methodology used by researchers studying the effect of external networks in relation to firm performance (Brüderl & Preisendörfer, 1998; Chandler & Hanks, 1994; Ostgaard & Birley, 1996; Wu & Leung, 2005) is adopted. In this study, social capital expressed in the form of external network is operationalized in four types of network constructs: the network size, the trustworthiness, the network support and the network diversity. With the exception of network diversity, all network constructs are grouped and tested under the categories of strong tie and weak tie perspectives respectively. A series of seven hypotheses representing the above four types of network constructs asserting the external network determinants of the success of the start-up firms are posited. In addition to these seven hypotheses, there are three hypotheses which assert the interaction effect of the entrepreneur's networking capability and the initial network structure on the success of small start-up firms, are also posited. A summary of the results of the study based on the sample size of N=89 is provided in the following:

Table 6.1 Summary of results

Hypotheses	Findings
H1: The initial size of strong tie network of the entrepreneur is positively associated with the entrepreneur's small business start-up success.	Partially supported
H1a: The usefulness of initial strong tie network support as perceived by the entrepreneur is positively associated with the success of small start-up firms.	Partially supported
H1b: The level of trust that the entrepreneur has in his/her strong tie network is positively associated with the success of small business start-up.	Not supported
H2: the initial size of weak tie network of the entrepreneur is positively associated with the entrepreneur's small business start-up success.	Not supported
H2a: The usefulness of initial weak tie network support as perceived by the entrepreneur is positively associated with the success of small start-up firms.	Partially supported

H2b: The level of trust that the entrepreneur put in his/her weak tie network is positively associated with the success of small business start-up.	Not supported
H3: The level of diversity of the entrepreneur's initial network ties is positively associated with the start-up success of the entrepreneur's small business.	Partially supported
H1c The interaction between an entrepreneur's networking capability and the initial size of strong tie network is significantly related to start-up success.	Partially supported
H2c The interaction between an entrepreneur's networking capability and the initial size of weak tie network is significantly related to start-up success.	Not supported
H3c The interaction between an entrepreneur's networking capability and the diversity of the external network of the entrepreneur is significantly related to start-up success.	Not supported

H1: the initial size of strong tie network of the entrepreneur is positively associated with the entrepreneur's small business start-up success.

Hypothesis H1 assesses the linear relationship between the size of strong tie network and the start-up success. According to social capital theory, network resource is embedded in the tie relations (Lin, 1999). Bonding social capital theory further suggests that close relationship can provide economic benefits such as reducing transaction cost and getting economic support (Dasgupta, 2005). This hypothesis H1 proposes that the larger the initial size of strong tie network, the larger the pool of bonding social capital resources and thus the better the performance of the start-up business. After accounting for the effect of the control variables, the test confirms this hypothesis H1 in one type of success measure only, the sales growth measure. In other words, the initial size of the strong tie network is found to have significant positive association with the sales growth of start-up business.

The initial size of strong tie network, however, has no statistical significant association with all other success measures (the sales growth versus competitor, the profit growth, the profit growth versus competitor and the owner manager's self expectation). As discussed in the previous chapter about the feedback from small business owners that the measures in comparison with competitors may not give accurate estimates because the businesses are too small to have resources to get competitor information, and there are too many competitors for comparisons. It can be seen in the results that most network constructs do not have statistical significant association with the competitor comparative success measures in the given sample. It is, however, possible that the non-confirmative result may be due to the smallness of sample size that statistical effects from these small effect variables cannot be detected. Nevertheless, hypothesis H1 is partially confirmed.

H1a: The usefulness of initial strong tie network support as perceived by the entrepreneur is positively associated with the success of small start-up firms.

Hypothesis H1a assesses the linear relationship between the support from the strong tie network and the start-up success. This hypothesis directly measures the usefulness of the support from strong ties in the perspective of the owner managers. This kind of measure of network support is one strategy suggested by Brüderl and Preisendörfer (1998) that it may help to resolve the potential problem of some entrepreneurs who do not make full use of the potential of their networks. The regression test confirms that after accounting for the effect of the control variables, the support from strong ties has significant positive association with the start-up success of small firms in two success measures, the sales growth and the profit growth. It has no statistical significant association with the sales growth versus competitor, the profit growth versus competitor and the owner manager's self expectation of start-up success. Thus, the hypothesis H1a is partially confirmed.

H1b: The level of trust that the entrepreneur has in his/her strong tie network is positively associated with the success of small business start-up.

The Hypothesis H1b examines the positive association of the trustworthiness of entrepreneur's strong tie network on the start-up success. By nature, strong tie means close relationship or good *guanxi,* which implicitly incorporates trust (Patulny & Svendsen, 2007; Su *et al.*, 2007). As suggested by Sobel (2002), the level of trust determines the degree to which the entrepreneur is willing to extend credit or rely on the advice and actions of others. This hypothesis assesses the positive effect of having reliable advices and actions from strong relations on the start-up success. However, after accounting for the effect of the control variables, trustworthy of strong ties is found to have no significant association with the start-up success across all start-up success measures. The hypothesis fails. There is no evidence to support the proposition that having a trustworthy strong tie network can contribute to the success of business start-up.

Given that the literature suggests to operationalize social capital as trust (Levin & Cross, 2004; Sobel, 2002; Uslaner, 1999; Wu, 2008), the non-significant result deserves a particular attention on the entity of trust (Witt, 2004), especially the entity of trustworthiness. One possible reason to explain this non-significant result is that since it is the owner managers, not their network members answering the questionnaire, the items of the trust construct are viewed from the angle and perception of the owner managers. This trust, therefore, measures merely the willingness of the entrepreneur to take the advice from their network members, and does not measure the trust level of his or her network members who trust the entrepreneur and therefore provide resources to the entrepreneur. When this hypothesis H1b is formulated, an implicitly assumption is the reciprocity of trust in the *guanxi* relations (Chen & Chen, 2004; Tsang, 1998), which suggest a mutual trust. This reciprocal trust is obviously not supported by the results of this study.

Another possible reason may be that the higher the level of trustworthy of the entrepreneur means the entrepreneur is more willing to take the advices and the information from his or her close friends. As trust is associated with moral or faith in

the other persons instead of objectivity or rationality (Patulny, 2004), there may be situations that the entrepreneur takes the advices from his weak ties without rationally analyzing the appropriateness the information or advices for his or her businesses.

H2: the initial size of weak tie network of the entrepreneur is positively associated with the entrepreneur's small business start-up success.

Hypothesis H2 assesses the linear relationship between the size of weak tie network and the start-up success. This hypothesis is essentially of the same nature as hypothesis H1, which is based on the social capital theory that resource is embedded in the network (Lin, 2001) and that the size of network is associated with the amount of resources. The proposition suggests that the more the network resources, the better the performance of the start-up firms. After accounting for the effect of the control variables, the initial size of weak tie network has no significant association with the success of small business start-up across all success measures.

It can be noted that even though both hypothesis H1 and hypothesis H2 measure similar type of network construct (which is the network size), their results are quite different. Hypothesis H1 shows one significant positive linear association of the initial size of strong tie network with start-up success on the sales growth, but hypothesis H2 shows none at all. The main differences between the strong tie network and the weak ties network is the difference in the closeness of the network relations (Capaldo, 2007) and the difference in the magnitude of the size of the networks. Strong tie by definition has closer relationship than weak tie (Granovetter, 1973) and thus, this magnitude difference is obvious. For the magnitude difference, the size of weak tie network of any individual entrepreneur is likely to be larger than the size of strong tie network. The reason is that strong tie usually demands more frequent or repeated contact in order to maintain the strong relationship but not the weak tie (Granovetter, 1973). It is relatively much less time consuming to build and maintain a weak tie network than a strong tie network such that the size of weak tie network is likely to grow faster and eventually larger than the size of strong tie network.

Thus, one possible reason for not getting linear result between the size of weak tie network and the start-up success may be attributable to the cost of networking activities (Johannisson, 2000). It can be noted that network ties are based on trust and reciprocity (Witt, 2004). Entrepreneurs cannot just ask their network partners to give them information and to allow them to access to cheap resources without obligation of themselves. Entrepreneurs may have to contribute to their networks as well (Johannisson, 2000). As most people are driven by reciprocity (Fehr & Gachter, 1998), the cost of networking activities is stemming from the reciprocity. Such reciprocal obligation may make the resource benefits derived from the network not linearly related to the size of the network (Witt, 2004). Thus, when a new network partner is added to the entrepreneur's network, it is likely that the entrepreneur's marginal opportunity cost of time will increase (Witt, 2004). For this study, there may be a possibility that the initial size of weak tie network may be too large that it consumes too much time of the entrepreneur to maintain or to mobilize it. As indicated by Uzzi (1997), the personal networks of entrepreneurs can be too large that they reduce the flow of new information to the entrepreneurs and cause inefficiencies. Uzzi (1997:58) uses the term 'overembeddedness' to depict networks that are too large.

When hypothesis H2 was developed, the possibility of having non-linearity was not completely overlooked. One implicit assumption of the hypothesis H2 is that the initial network is the network the entrepreneur bringing to the start-up company (Hite, 1999; Saxenian, 1990). The initial network is thus assumed to have been built before the start-up and not after. Anyway, this implicit assumption together with hypothesis H2 are not supported by the result of the study.

H2a: The usefulness of initial weak tie network support as perceived by the entrepreneur is positively associated with the success of small start-up firms.

Hypothesis H2a assesses the linear relationship between the level of support from weak tie network and the start-up success. This hypothesis uses exactly the same approach as H1a that it directly measures the usefulness of the support from weak tie network in the view of the entrepreneur. The test confirms that after accounting for the effect of control variables, the support from weak tie network has significant positive association with the start-up success of small firms under a moderate significant sales growth model F (ρ <0.1). It also confirms that accounting for the effect of the control variables, the support from weak tie network has significant positive association with the start-up success of small firms in the sales growth vs competitor model. Hypothesis H2a has no significant association with the profit growth, the profit growth versus competitor, and the owner manager's self expectation of start-up success. Thus, the hypothesis H2a is only partially confirmed.

H2b: The level of trust that the entrepreneur has in his/her weak tie network is positively associated with the success of small business start-up.

Hypothesis 2b examines the positive association between the trustworthiness of entrepreneur's weak tie network and the start-up success. The hypothesis assesses the positive effect of having reliable advices from the weak tie relations on the start-up success. After accounting for the effect of the control variables, the trustworthiness of weak tie network has no significant association with the start-up success across all start-up success measures. Hypothesis H2b fails to provide evidence to support that having a trustworthy weak tie network can contribute to the success of business start-up.

Similar to the above H1b discussion, the hypothesis H2b measures merely the willingness of the entrepreneur to take advices from their network rather than directly measures the willingness of his or her network members to provide resources

to the entrepreneur. The assumption of reciprocity that the network members will put similar level of trust to the entrepreneur has no evidence to support.

The other reason described in the above H1b discussion that high level of trust suggests the entrepreneurs are more willing to take advises and information from their network may be more applicable to explain the failure of the hypothesis H2b than H1b. Since trust is the willingness of the entrepreneur to permit others to influence them (Sobel, 2002), it exposes the entrepreneur to vulnerability and risks (Goel & Karri, 2006). As weak tie are typified by distant and infrequent interactions (Granovetter, 1973) and that the relations are loose contacts (Jenssen & Agreve, 2002), weak tie relations may not have long enough history for the entrepreneurs to ensure good understanding with the network members. To trust weak ties, entrepreneur simply bets on relational outcome, which may lead to the situation of trust without rational and objective verifications (Zahra *et al.*, 2006). According to Geol and Karri (2006), entrepreneurs tend to apply effectual logic rather than causation logic[13] to make business decisions. The effectual logic of entrepreneurs likely leads to over-trust on their network ties (Goel & Karri, 2006) resulting potential negative impact to the start-up business performance.

H3: The level of diversity of an entrepreneur's initial network ties is positively associated with the start-up success of the entrepreneur's small business.

Hypothesis H3 assesses the linear relationship between the diversity of network ties and the start-up success. Diversified network can allow the entrepreneur to access a wide range and diversified information (Burt, 2005). Information diversity is regarded by Koka and Precott (2002) as one of the three distinctly benefits[14] of social capital. Start-up firms that link with diversified networks that operate in different market segments, utilize different technologies and belong to different industries, can identify opportunities in terms of new and different skills faster than those firms that do not (Koka & Prescott, 2002). Hypothesis H3 suggests that the more the

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[13] According to Geol & Karri (2006), effectual logic involves choosing possible effects using given sets of means whereas effectual logic involves choosing means to achieve desired effects.
[14] Koka & Precott (2002) suggests that social capital yields three kind of benefits: in the form of information volume, information diversity and information richness.

diversified network, the better the performance of the start-up firm. After accounting for the effect of control variables, the regression test confirms the hypothesis H3 that the diversity of entrepreneur's initial network ties has significant positive association with the start-up success in two success measures, the sales growth and the owner's expectation of success. The sales growth model has significant at level $p < 0.1$ but the contribution of network diversity to the sales growth has high statistical significance ($\rho < .001$). Network diversity is not found to have statistical significant association with all other success measures (the sales growth versus competitor, the profit growth and the profit growth versus competitor). Thus, the hypothesis H3 is partially supported.

Full model of external network start-up success

The following figure is the same as figure 3.2. To put this figure here is for the convenience of illustration of the full model, which includes all relational and structural constructs.

Figure 6.1 Full model of external network start-up success
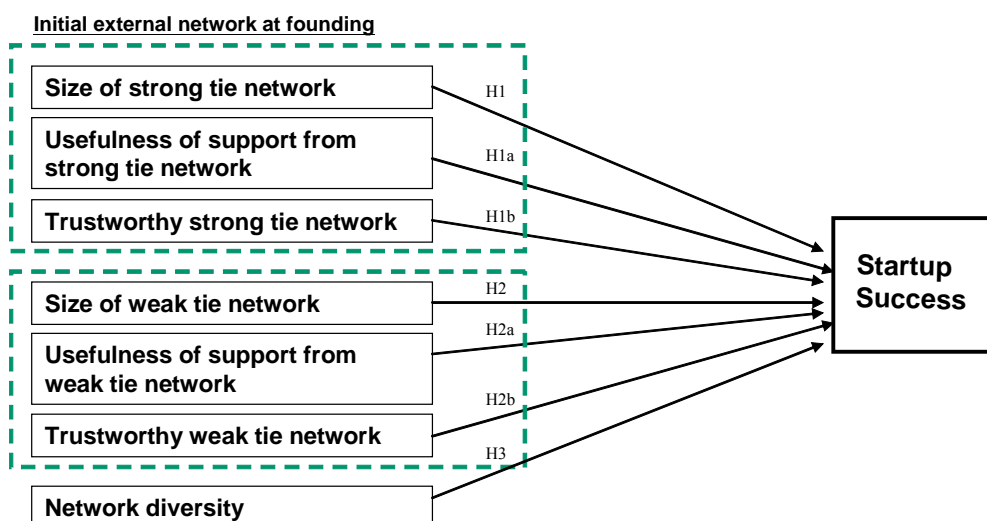
Both theoretical studies (Adler & Kwon, 2002; Burt, 1997; Dasgupta, 2005; Nahapiet & Ghoshal, 1998) and empirical studies (Brüderl & Preisendörfer, 1998;

Spence & Schmidpeter, 2003; Vainio, 2005; Wah *et al.*, 2007; Young, 2005) suggest that social capital has impact on firm performance. It is based on the resource benefits (Burt, 1997; Johnson, 2000; Levin & Cross, 2004) of the external networks and the lack of internal resources of small firms (BarNir & Smith, 2002; Havnes & Senneseth, 2001; Kai Ming Au & Enderwick, 1994) that the full model is developed.

In this full model, the structural constructs (network size and network diversity), the relational constructs (trust and support) of the initial social capital as well as the control variables are all entered into the model as shown in the above figure 6.1 to determine a linear relationship of the network constructs with start-up success.

After accounting for the effect of all proposed individual network construct variables and the control variables, the results indicate that three network variables: the size of strong tie, the support from weak ties and the network diversity have significant positive association with the start-up success with respect to the sales growth measure. There is no significant association with other start-up success measures, neither profit growth nor owner manager's expectation of success. The multiple regression result of the full model is consistent with the statistical results of individual construct models on the size of strong tie network, the support from weak ties, and the network diversity. They all are linearly positive associated with the sales growth. The result of the full model is also consistent with the results of individual network constructs of trust (hypothesis H1b and hypothesis H2b) that there is no significant association with start-up success found for these trust constructs across all success measures.

Only one inconsistence is found on one variable, i.e. the support from strong tie network variable. In the full model, the support from strong tie network shows no evidence of any significant association with the start-up success across all start-up success measures, but in the individual construct model of hypothesis H1b, the support from strong tie network is found to have significant linear association with start-up success on the sales growth and the profit growth. The inconsistence of these two multiple regression statistics (full model and individual construct model) may be due to possible correlations between independent variables. As pointed out

by Norusis (2002), removing independent variables in multiple regression equation would change the result because some independent variables may depend on the other independent variables included in the model (Norusis, 2002). Although the correlation coefficients shown in the correlation table 5.7 of Chapter 5 are low and mostly non significant, there are still some degree of correlation between certain independent variables. Nevertheless, there are six independent variables out of seven showing consistent results in the full model compared with their respective individual models of hypotheses. This suggests that the full model largely reflects the findings of individual hypothesized models. Above all, the full model is significant with R^2 at 0.377 which suggests that the network model is at least partially verified.

H1c The interaction of an entrepreneur's networking capability and the initial size of strong tie network is significantly related to start-up success.

H1c examines the moderation effect of the entrepreneur's networking capability on the initial size of strong tie network on the success of start-up. Based on the results of the previous hypothesis H1 testing, the sales growth is the only model that has significant association with the size of strong tie network, and thus the sales growth is the only dependent variable used in the moderation regression test. The regression result of H1c indicates that only one out of the five entrepreneur's networking capability variables has significant but negative moderation effect on the relationship between the initial size of strong tie network and the sales growth. All other moderating variables of the networking capability are found non significant.

The only moderating variable that has significant moderation effect is associated with organization and coordination capability which is expressed as 'STie x Organiz' is found to have negative beta coefficient (-0.231). This suggests that the effect of the entrepreneur's organization and coordination capability reduces the positive effect of the size of strong tie network on the start-up firm rather than enhancing it. This is contrary to the assumption of the hypothesis. Given that the organization and coordination capability is the managerial skills of entrepreneur that literature (Chandler & Hanks, 1994; Gadenne, 1998; Martin & Staines, 1994;

Watson *et al.*, 1998) suggests to have positive impact on business performance, the finding is surprising.

One possible reason for the negative effect may be that good managerial skills in organizing and coordination are associated with good time management. People with good time management skills is likely to set priority on things according to the order of importance (Covey, 1990), and that these people may give up less important things to allow more time to do important things. Strong tie relation demands frequent and repeated contacts of network members (Granovetter, 1973). Thus, to build and maintain a strong tie relationship is time-consuming, and the time comes out at the cost of participation in formal economic sphere of working time (Beugelsdijk & Smulders). The opportunity cost of time (Witt, 2004) and the effort to maintain a strong relationship may impose excess burden to already limited resource small business owners. The larger the size of strong tie network means the higher the demand on time cost which, in reality, conflicts with the need of the entrepreneurs to have more time to manage their business.

H2c The interaction of an entrepreneur's networking capability and the initial size of weak tie network is significantly related to start-up success.

H3c The interaction of an entrepreneur's networking capability and the diversity of the external network of the entrepreneur is significantly related to start-up success.

Both hypothesis H2c and hypothesis H3c fail to provide evidence to support the moderation effect of entrepreneurs' networking capability on start-up success with respect to the size of weak tie network and the network diversity respectively. Hypothesis H2c is not even qualified to be tested for the moderation as the prerequisite assumption of having a significant relationship between the size of weak tie network and the start-up success is not supported in hypothesis H2. As for hypothesis H3c, even though the linear regression equations in the model for the sales growth and the model for the owner's expectation of success are respectively significant, there is no evidence of significant contribution of any moderating variables.

When the hypotheses of moderation are developed for the study, it is based on the assumption that an entrepreneur having better networking capability in terms of the social competence and the coordination and organizational skills can enhance the extraction and the use of the resource benefits embedded in the network structure to support the start-up business. In other words, entrepreneur's networking capability is assumed to be able to enhance the success outcome contributed by the initial network structure of social capital (in the form of network size and network diversity). The results of this study, however, do not provide any evidence to support this assumption even though some significant moderation effect on the start-up success is found due to the interaction of the organization and coordination capability and the network diversity as discussed in the above H1c section.

6.2 Implications

Theoretical and entrepreneurial implications of social capital are discussed in this section respectively.

6.2.1 Theoretical implications

Four theoretical implications are identified from the study: 1) the measurement of social capital, 2) verification of the prescription of social capital on small start-up firms, 3) the social capital framework of start-up success and 4) the moderation effects.

1) Social capital has recently been emerging in many different of fields of studies including sociology (Portes, 1998), political science (Uslaner, 1999), organizational theory (Adler & Kwon, 2002) and economics (Dasgupta, 2005). For small firm performance, the premise of the theory suggests that social capital is a valuable resource embedded in network ties, which can contribute to firm performance (Honig, 1998; Premaratne, 2001). Based of this premise, social network is expected to contribute to the success of small start-up firms which not only have the liability of newness but also have liability of smallness. To verify such proposition, the research must first conceptualize the forms of social capital from which network resource

constructs are operationalized. Given this requirement, the first important theoretical implication arising from this research is with respect to the operationalization and measurement of the social capital.

Social capital can be expressed in different forms depending on the needs of the researchers. These forms can be expressed in terms of trustworthiness, information-flow capacity, norms accompanied by sanctions (Coleman, 1988); or in terms of dimensions such as cognitive, relational and structural dimensions (Nahapiet & Ghoshal, 1998) ; or in terms of information format such as information diversity, information volume and information richness (Koka & Prescott, 2002). Since different operationalization approaches may lead to different results (Brüderl & Preisendörfer, 1998), for this study, both structural and relational dimensions are chosen to operationalize the initial network conditions. This choice is supported by Moran (2005) who points out that though structural embeddedness is by far the most common conceptualization of social capital, relational embeddedness is also important to firm performance.

The strength of ties, whether strong or weak, falls in the category of relational dimension whereas the size of network belongs to the structure dimension. This study merges these two dimensions of social capital and takes into consideration of the contribution from both dimensions. The study introduces the measurement of the size of strong tie network and the size of weak tie network respectively rather than the measurement of the size of just network of ties. The conceptual implication of the study is, therefore, to provide a perspective of structure versus relational dimension measurement by separating the measurement of network constructs such as the network size, the trust and the support to base on the categories of strong or weak ties so as to accommodate the effects of both dimensions. Given that network changes over time (Hite & Hesterly, 2001), this study also offers the concept of initial network constructs by measuring the network size at the early stage of the start-up.

2) The second theoretical implication addresses the prescription of social capital theory to start-up success. Social capital theory asserts that networks are valuable

resources (Lin, 1999). According to the resource perspective of social capital as discussed in Chapter 2, the main prescription of social capital is that initial external network conditions have positive effect on the success of small business start-up in terms of the sales, the profitability and the owner's self expectation of success after accounting for the effects of entrepreneur's experience and education and the industry of the firm.

The results of this study are, to some extent, mixed with regard to the total verification of the main prescription of social capital on the success of small firm start-up. For instance, the size of weak tie network is not found to make any unique contribution to firm success whether it is treated in isolation as an individual construct accounting only for the control variable effect or simultaneous accounting for all other network constructs and the control variables of the study. The size of strong tie network on the other hand is found to be an important determinant of firm success in one of the success measurement of the start-up firms. Whereas, network constructs of trust, both the strong tie trust and the weak tie trust, do not have unique contribution to the start-up success whether they are treated as individual isolated constructs or simultaneously account for the effects of other network constructs. Network diversity on the other hand has significant contribution to the start-up success in some success measures -- both when it is treated in isolation as an individual contribution factor accounting only for the control variables and simultaneously accounting for the effects of all other network constructs together with the control variables.

Anyway, the finding offers some degree of confirmation of the proposition about the positive effect of external networks as described in the literature in Chapter 2. The finding suggests that whether taken in the context of a broad pool of initial network conditions or taken individual network constructs in isolation, some initial social capital dimensions, but not all, are playing important roles in explaining the success of small business start-up.

3) The implications of the start-up success framework are discussed in three different aspects: the strong tie network versus the weak tie network, the individual construct model versus the full model and the moderation effect.

Strong tie (bonding) network and weak tie (bridging) network

There are debates in the literature regarding whether bridging network or bonding network is better (Beugelsdijk & Smulders, 2002; Patulny & Svendsen, 2007). In this study, the effect of both the weak tie network (bridging) and the strong tie network (bonding) in the context of small business start-up in Hong Kong are evaluated. The findings are summarized in table 6.2 as follows.

Table 6.2 Comparison of the effects of strong tie and weak tie on start-up success of small business

Constructs	Strong tie → start-up success	Weak tie → start-up success
Size	Partially support (significant in one success measure)	Not support
Support	Partially support (significant in one success measure)	Partially support (significant in two success measures)
Trustworthy	Not support	Not support

It can be seen that both the strong tie constructs and the weak tie constructs have some variables positively associated with the start-up success of small firms, which implies that both types of network ties, to some degree, have positive impact on the success of small firm start-up.

Individual construct model versus full model

Most social capital studies on firm performance tend to operationalize social capital (or measurement of networks) by specific network constructs such as the network size (Hansen, 1995), the network diversity (Reagans & Zuckerman, 2001), the frequency or the time spending in networking (Aldrich & Reese, 1993), and the trust (Wu, 2008) and these constructs are the primary focus of their studies. It is difficult, if not impossible, to take all types of operationalizational constructs of social capital

into consideration as there is a fairly large number of conceptual varieties (Adler & Kwon, 2002) and very many different operationalizational approaches to social capital (Brüderl & Preisendörfer, 1998). Although to predict firm success by using the evidence from a single network construct model may potentially be misleading as it does not simultaneously account for the potential effect coming from the other network constructs, it still has a merit of its own given that simultaneously including all possible variety of independent operationalizational variables in one model is not possible. The number of independent variables can never be exhaustive as there is always something more to consider. Besides, when all possible individual network constructs are included in one network model, there may exit interactions or correlations in the forms of complementary or co-specialization among the network variables. The overall results thus may not be truly representing the effect of each individual network variable. Furthermore, if there is high interaction among independent variables, the collinearity issue may emerge. Nevertheless, collinearity is not an issue in this study.

This study adopts an approach to assess an individual network construct model on its own right, and uses a full model to further verify the impact of the overall initial network conditions on the start-up success. It is found that the effect of an individual network construct in its own model versus its specific effect in the full model is largely consistent. Five independent variables of out six are found to have similar effect on the start-up success in the single construct model as well as in the full model with all network constructs of the study.

Moderation model

The moderation model assesses the enhancement effect of the entrepreneur's networking capability on the structural dimension of social capital. In the interaction with strong tie network, only one out of five networking capability variables is found to produce significant effect on the sales growth. No evidence of any moderation effect from the other structural constructs is found statistically. This largely non significant moderation effect of networking capability variables is contrary to the suggestions in the literature about the advantage of the entrepreneur's social competence and managerial skills (Baron & Markman, 2003; Glaeser *et al.*, 2002)

and the benefits of entrepreneurial networking activities (Dodd & Patra, 2002; O'Donnell, 2004; Zhao & Aram, 1995). Thus, the framework of moderation model may deserve further exploration.   For instance, one may want to find out whether there is any moderation effect of the relational construct and the structural construct of social capital or the relational construct of social capital and the entrepreneur's networking capability on the start-up success.   It should be noted that, as indicated in the previous section, it cannot rule out a possibility that some of the moderation effect may be too small to be detectable in a small sample size.

4) Some of the literature treat social capital as an intangible asset of a firm (Pena, 2002). If social capital is an asset, is it true that the more the social capital the more the benefit? From the perspective of the start-up firm performance, the value of social capital lies in the potential benefits that can be derived from the network's embedded resources (Liao & Welsch, 2005; Lin, 1999). As Witt (2004) points out, many empirical network studies neglect the cost of networking. Network benefits do not come without a cost whether it is a direct cost from the delivery of the services (or information) to the entrepreneur, or an indirect cost in the form of the opportunity cost of time of the entrepreneur (Witt, 2004). Thus, it should be the net benefit (total benefit less the cost to derive the benefit from social capital) that is counted.

From the perspective of the structural dimension of social capital, the volume of social capital may be expressed in terms of the size of the network and the diversity[15] of the network (Reagans & Zuckerman, 2001). As for the network size, the results from the regression models confirm that the size of strong tie network has a significant positive association with the sales growth, but the size of weak tie network has no significant association with any success measure at all. As indicated in the footnote of page 96, entrepreneurs actually have only one network consisting of both strong ties and weak ties.   The main reason to split the

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[15] From the network density perspective, more social capital may also mean the denser the network (Greve, 1995). The density and the diversity are two opposite characteristics of network (Reagan and Zuckerman, 2001) and they are, to some extent, mutually exclusive within the same network. Thus, unless the concept of density and diversity apply to different sets of networks of the entrepreneurs, using both to represent the amount of social capital may be contradictory. Since network density reflects the number of network members who are connected to one another as well as the strength of the connections (Greve, 1995), a dense network is likely to be a bonding network, which is more relevant to the internal network within a firm. As the study is focused on the external networks of small business start-up, network density is therefore not chosen as a variable.

entrepreneurial network into strong and weak tie network is used for the purpose of the study as described in the hypothesis development section. An attempt has been made to combine the number of weak ties and strong ties to form one single network size for multiple regression analysis. Nevertheless, no statistical significant result is found between this combined network and the start-up success measures. In the sample of this study, the number of weak ties is found comparatively more than the number of strong ties, i.e. the size of weak tie network is larger than the size of strong tie network[16]. This statistical non-significance result of the combined network, thus, validates one justification of separating the entrepreneurial network into strong and weak tie networks for the study. This justification is desribed in the hypothesis development section that the effect from strong tie network effect is expected to be obscured by the weak tie network because of its comparatively smaller network size.

In consideration of the cost of networking as discussed in the above, the possibility of non-linear relationship (Aldrich & Reese, 1993) between the network size and the start-up success cannot be ruled out. It is possible that the amount of net benefits derived from a network may reach a ceiling as the network size grows to a certain specific size. Exceeding such a size, the benefits may decrease with the increase in the size of the network. One possible reason may be due to the increase in the marginal cost of establishing and maintaining the network relationship (Johannisson, 2000). All these suggest a possibility that the relationship between network size and small business performance may be an inverse U-shaped. If this U-shaped proposition is correct, then the next question is what the optimal size of a network that can benefit the most to the small business start-up would be. This may worth flagging a direction for future study.

As for the network diversity construct, the regression results confirm that there are statistical significant positive associations between the network diversity and the sales growth, and between the network diversity and the owner's expectation respectively. Nevertheless, since the network diversity is based on the number of

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[16] This is consistent with the claim that strong ties need more time and effort to build and develop than weak ties.

contacts in the action set (Hansen, 1995), the maximum number of diversified contacts is determined by the total size of the action set. As discussed above, if there is a cost involved in building and maintaining a network tie, the size of the network will be eventually limited to a point where the incremental cost of networking exceeds the benefits, which in turn limits the extent to which a network can be diversified.

From the perspective of relational dimension of social capital, the more the social capital means the closer and the better the quality of relationship. The quality of relationship may be expressed in the forms of the trustworthiness and the level of the support from the network respectively. The study finds positive significant associations of the network support to entrepreneurs for both the strong tie network and the weak tie network with respect to certain start-up success measures. Nevertheless, as for the other relational construct, trust, the study finds no statistical evidence of any significant relationship between the trustworthy networks of people with the start-up success. The benefits of network from the perspective of relational dimensions are therefore mixed.

In concluding the theoretical implication section, based on the fact that some network constructs, in both structural and relational forms, have significant positive effects on the start-up success, it is likely that the initial network of the entrepreneur plays an important role in the start-up success of small firms. The study gives an implication on the conceptual variables of the structural and relational dimensions of social capital; an implication on social capital as a prescription of start-up success; an implication on the linear framework and the moderation frame work; finally an implication of the possible optimal benefits from social capital.

6.2.2 Entrepreneurial implications

The value of external social network to start-up success

As described in the literature, many economic benefits (Dasgupta, 2005) can be derived from social capital, including reputation benefits (Torres & Murray, 2003),

market information benefits (Lee, 2007), advise and experiential learning (Zhou *et al.*, 2007), innovational ideas (Romijn & Albu, 2002), and knowledge acquisition and exploitation (Yli-Renko *et al.*, 2001), and all these benefits are relevant to the start-up of new business. Network benefits, as discussed in the above, actually involve a cost even though the cost, such as the networking time of entrepreneur, may not be explicit. The investment of time (Uzzi, 1997) and the acceptance of reciprocal obligation (Hu & Korneliussen, 1997) may be the conditions for the entrepreneurs to access the potential benefits from their network to support their start-up business. As time is always a limited resource, to maximize the return from the time investment in their network, entrepreneurs need to spend their time on the most effective type of networks.   The result of this study suggests that both the support from the strong tie network and the support from the weak tie network have positive association with certain measures of the start-up success, but only the size of strong tie network has significant positive association with the start-up success, not the size of weak tie network. This difference implies that in the context of starting up a small business, the size of closed bonding network is more important than the size of bridging network. This further implies that in the context of small business start-up, to optimize the usage of time, the entrepreneur should not to spend as much time on the weak tie network as on the strong tie network. In addition, the findings also suggest that the diversity of ties has significant positive association with the start-up success. Entrepreneurs are suggested to put more effort to increase diversity of their network ties.   Nevertheless, as discussed above, time and other potential cost of reciprocal obligations have to be balanced in building or maintaining their networks.

The finding on trustworthy network indicates that the level of trust on the entrepreneurs' external networks has no significant association with the start-up success. This may be relevant to previous study of Goel and Karri (2006) that entrepreneurs tend to over-trust their network. Thus, the implication to entrepreneurs is that they should be a little more reserve on trusting their external network. As in many other things in life, the 'golden mean' for trust may lie somewhere in the middle (Aldrich & Reese, 1993).

Since the study finds that the initial external networks of entrepreneurs have significant associations with certain start-up success measures, the benefit of the initial networks on the start-up business is confirmed. Thus, another implication to entrepreneurs is that entrepreneurs should plan and build their network prior to starting up their businesses.

Entrepreneur's networking capability to business start-up

Dubini and Aldrich (1991) suggest entrepreneurship is a networking activity. Brüderl and Preisendörfer (1998) also point out that building up a new business means activating existing social relationships and creating new relationships. Based on these views of entrepreneurship, networking is the primary and core activity of entrepreneur in starting up new business, and networking becomes an integrated part of the start-up process.

Brüderl and Preisendörfer (1998) propose an empirically not supported network compensation hypothesis that entrepreneurs with less resources would try hard to mobilize their social contacts and receive more support from their network. Though their hypothesis is not empirically supported in their study, their argument about the advantage of entrepreneurial network on the performance of small firms is supported by the results of this paper on several network constructs.

While networking is the major activity of entrepreneurs in business start-up, the related networking capability of entrepreneurs in terms of their social competence (Baron & Markman, 2003) and the resource coordination and organization skills, in theory, should play a role in the success of small business start-up as described in the hypothesis formation in Chapter 5. The results, however, does not confirm a significant interaction effects of the networking capability in two social capital structural constructs out of three. There is one significant effect found on the relationship between the size of strong tie network and the sales growth, but the effect is negative. Thus, the moderation hypotheses are not empirical supported in this study. Nevertheless, this failure result merely suggests that the networking capability of an entrepreneur does not interact with the initial network structure to

produce a significant positive result on the start-up success rather than that the networking capability has no role to play in the start-up of a new business. Besides, as indicated in the variable contribution discussion in previous chapter, the small sample size of the study may not be able to statistically detect a small effect. In other words, there may be a possible small moderation effect which is not detectable in the given small sample of data.

6.2.3 Discussion and contribution to knowledge

Witt (2004) suggests that the costs of networking activities for entrepreneurs may not be linearly rising with network size, and that it is more plausible to assume that the marginal costs of adding a new network partner to one's personal network increase. This suggests a U-shaped relationship between network size and start-up success as discussed in the previous section. Theoretically, extreme levels of diversity may lead to information overload and decision-making paralysis. Too much diversity is expected to diminish the benefits derived from the network. This suggests that the U-shaped theory may be applicable to network diversity as well. This U-shaped proposition is, however, not quite confirmed by the results of the study. On the contrary, the results suggest a linear relationship between network diversity and performance of start-up for both the sales growth and the owner expectation in the study. Further more, the network diversity measure uses the total network (entire action set) of the entrepreneur with no differentiation of strong or weak ties. In other words, the extent of diversification of the entrepreneurial network includes the diversification effect from both strong tie and weak tie networks. The combined result is expected to be more diversified than an individual strong or weak tie network alone. As discussed in the previous section, the diversity of a network is limited by the size of the network. This linear relationship result between network diversity and the start-up success may raise a question challenging the assumed relationship between network diversity and network size. As seen in the correlation table 5.7, there is no statistical significant correlation between network size and network diversity. The statement that "the larger the network size, the more the diverse is the network" seems obvious but may not be valid in reality.

The measure of network diversify in this study is based on the diversity of the occupation and the industry of the entrepreneur's contacts. The choice of these two construct variables comes from the theory that heterogeneity of knowledge and experience of a network can provide benefits to new businesses (Rodan & Galunic, 2004). Although the exact benefits derived from the network diversity has not been included in the study, different backgrounds of people is likely to facilitate the generation of new ideas (Burt, 2005) which can help to resolve un-precedent problems facing many new businesses. The positive association of network diversity to start-up success result indirectly supports that a general proposition that new idea generations is especially important to start-up business.

Network evolution theory (Hite & Hesterly, 2001) provides another perspective on which type of network is better for starting up business. The finding that strong tie network has positive association with start-up success whereas the weak tie network does not, may support the evolution theory that at different stage of start-up, there is a different need for the types of networks. At the very early stage, strong tie network is expected to be better as emotional support may help the entrepreneur to overcome psychological difficulties (Brockhaus & Pamela, 1986) during such a big change to the entrepreneur as starting a new business; whereas information benefits (Anderson & Jack, 2002) from weak tie network may play a role in the subsequent maintenance and the growth of the new business. As the study is focused on the very early stage of new business start-up, the results apparently support this theoretical reasoning and proposition.

The study only measures the effect of social capital on start-up success without measuring how effective are the social capital resources. Whilst effectiveness of social capital is worth pursing, a confirmed positive effect of social capital on start-up performance is the pre-condition without which merely talking about effectiveness would be meaningless. A partially supported result may be a good foundation for further pursuing the effectiveness of social capital on start-up business in future research.

The results about the usefulness of the support are found positive associated with start-up performance for both the strong and the weak tie relations on some

success measures, suggesting that merely a relation by itself, not counting the strength of a relation, is useful.   Thus, the concept of relational asset of a firm may not merely limited to strong relation as the term implies, but also weak linkage, or simply a relation.   An insight may be brought that a social relation by itself is already a social capital resource disregard of the strength of the relationship.

Relational asset can be regarded as one type social capital (Lin, 2001). Thus, social capital resource is fully compatible relational asset of a firm. In this paper, the strength of relations of each contact in the entrepreneur's network is broadly categorized as strong ties and weak ties. The overall results of all variables in these two categories of measures is found partially support the proposition described in the literature review that both the strong tie and weak tie networks can contribute to the success of small business start-up either in structural or in relational dimensions. It can be noted that the number of strong ties and the number of weak ties of an entrepreneurial network constitutes the pattern of a network. It thus brings up a question: is any optimal mix of these two kinds of ties that can bring the most benefits ?   What kind of pattern of the network structure in terms the number of strong ties and weak ties is the best for small business start-up? Future research is needed to answer this question.

The study is not able to confirm the association of trustworthiness of entrepreneur's social network with the start-up performance, neither strong tie network nor weak tie network. This can be due to the sample size too small to detect small effects of some variables (Cohen, 1988), or due to an inappropriate assumption of the reciprocity of trust that the level of trust gained from network partners can be reflected from the level of trust the entrepreneur put on his or her network as described in page 171. A close alternative measure of trust is reputation, which may have similar effect on business performance. For small new business, reputation of the firm comes mainly from the reputation of the entrepreneurs themselves. Although trust from the entrepreneurs' peers or external organizations towards the entrepreneurs can reflect the reputation of the new firms, the quantitative measure of trust from the views of these network contacts towards the entrepreneur is practically difficult. This is because the research may have to access these network contacts of each entrepreneur of the sample in order to get the information. Measuring reputation

is expected to be relatively easier than measuring trust. Reputation can be measured by self-report from the owner managers as most owners may have some degree of understanding of their own reputation. Reputation thus may be an alternative for trust measures of similar study in future.

6.3 Research limitations

This section highlights five limitations of the studies, including 1) the operationalization and methodology, 2) the response rate, 3) the reliability of items, 4) the measurement of constructs, and 5) the single informant.

1) The first limitation is related to the operationalization and methodology. It should be noted that the operationalizations of external network in this study are far from exhaustive given that social capital has many forms and dimensions (Wu, 2008). It should also be noted that social capital is a broad label (Brüderl & Preisendörfer, 1998) and that there are numerous methods to operationalize different dimensions and forms of social capital. Besides, different definitions of social capital may also lead to different strategies for measuring its effects (Carpenter *et al.*, 2004). This study captures only a few facets of a couple of dimensions of social capital, specifically the structural and the relational dimensions. The conceptual model merely provides a generic measure of the network effects across industries.

The study applies one-dimensional approach to test the effect of an individual network construct on the start-up success. This approach has a weakness of not accounting the effects of the other network constructs. Thus, a full model with all proposed network constructs is also tested to further verify the proposed relationship between individual construct and the start-up success. The purpose of this addition full model test is intended to provide more information for the analysis and considerations. As indicated in the results, the one-dimensional approach and the multi-dimensional (full model) approach are mostly consistent. As a matter of fact, even if all the constructs proposed in the study are accounted for, the problem of not including some other different dimensions and forms of social capital still exists. As pointed out by Durlauf (2002), social capital research is confounded by the

measurement and estimation issue (Durlauf, 2002). This may be an inherent limitation of social capital studies.

2) The second limitation is the relatively low response rate. The relatively low response rate of 10% may affect the representation of the sample and the generalizability of the findings, even though no response bias is found in the data.

As indicated in the previous chapter, the sample size is so small (N=89) that it is just adequate for the detection of beta value at 0.3 level (which requires N=84). Small sample size can limit the statistical power making it difficult to catch those variables with small effects on the performance and thus creates a beta risk. It is acknowledged that the small sample size of this study may not only affect the conclusion of the results but may also increase the risk of type II error. Small sample size is therefore one of the major limitations of this study.

3) The reliability of the items used to operationalize theoretical constructs is critical for any survey-based research (Hair *et al.*, 1995). The network diversity construct has to drop 2 items in order to maintain a high alpha (0.9386). This may raise an issue of whether or not there is a better approach to measure this construct such that it can be measured the same way consistently over time.

4) The fourth limitation is concerned with the measurement of the construct variables. The measurement of the size of network is based on the action set (Hansen, 1995) counted by the number of persons with whom the start-up entrepreneurs get in touch during the first 6 months of the start-up. Although most start-up entrepreneurs have good memory with whom they had contacted during their business start-up, there is still a possible reliability issue on the memory especially for those firms established many years ago.

Another limitation on the measurement has been mentioned in Chapter 5 that the success measure in terms of comparing with competitors may not be a good measure for small firms because small firms are usually small players in their market

that there may be too many competitors to compare. The results that the two comparative measures (the sales growth versus competitors and the profit growth versus competitors) show no significant relations across most independent variables[17] may support this argument.

5) The fifth limitation is the use of single informant for the research. The measurement of all variables in the studies relies mainly on the perception and the personal judgment of the owner managers of the small start-up business. When a single informant fills out the items that tap into independent and dependent variables with the same survey instrument, the issue of common method bias may arise. Common method variance is an inherent problem of single informant method (Wu, 2008). To assess seriousness of common method bias, Harman's one-factor test as suggested by Podskoff and Organ (1986) was performed (Podsakoff & Organ, 1986). Nevertheless, the result of the above factor analysis does not indicate any single factor structure suggesting that the common method bias is not a serious concern for this study.

6.4 Future research directions

Some future research needed have been mentioned in the implication section as well as in the discussion and contribution to knowledge section. In this section, the following three possible future research directions are identified: in the areas of operational construct refinement; the interactions of other network constructs; the multi-country comparison.

Operational Construct refinement

Widely accepted and consistent operationalizations of different forms and dimensions of social capital in the context of small business start-up are far from mature and more future work is needed. The first area for future research should be

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[17] Except the support from weak tie network, which has one significant (p<0.1) association with the sales versus competitors.

related to the quantification and the refinement of the social capital constructs used in this study. Future research may want to put some effort to quantify the level of social capital. One area of research may be to clarify and quantify the level of external network resources in terms of the amount of embedded resources available and applicable to the small business start-up situations. Another area is to develop a systematic process to identify new network constructs and to explore new approaches to existing constructs in the context of small business start-up. For example, the approach to trustworthiness may be flipped to measure how much the network members trust the entrepreneur instead of the entrepreneur trusts the network members as used in this study.

Interaction among network constructs and some other networking capability

Although there is no significant positive result in the interaction of networking capability of entrepreneurs and the structural dimension of social capital with respect to the start-up success, this study brings up a potential research option: the study of the interactive effects of some other entrepreneurial capability variables and some other network construct variables.

This paper treats individual network constructs as the unit of analysis and assumes a direct linear relationship between the constructs and the start-up success, but the results only partially support these hypotheses i.e. some forms of social capital do not show a linear relationship. One possible reason is that entrepreneurs may spend too much time in the networking activities (Aldrich & Reese, 1993) as discussed in the size of weak tie network section. The other possible reason for this non-linear result may be due to some un-known effects coming from the interactions of some other entrepreneurial networking variables and the other forms of network construct variables. Thus, the potential moderation effects on the start-up success from the interactions of the networking capability (Tsai, 2006) and the other forms of social capital, for instance, the relational, the cognitive or the information sharing forms of social capital (Wu, 2008) may deserve further studies.

Multi-country comparison

In the Hong Kong context, social capital in business may be associated with *guanxi* network, which is a unique type of cultural embedded social capital. Since social capital--performance relationship may vary in different cultural contexts (Hitt *et al.*, 2002), a multi-country comparative study may help to further verify the theoretical prediction that cultural and institutional difference can affect the applicability of the social capital approach to small business start-up in different countries (Koka & Prescott, 2002).

6.5 Conclusion

The theory of social capital and its application in business have been gaining much attention in the literature recently (Patulny & Svendsen, 2007). Social capital theory prescribes that there are valuable resources embedded in the social relations. From the economic and business perspective, these embedded resources can impact the business performance of firms. The application of social capital theory to the small business start-up situation is particularly relevant because small new firms, by nature of smallness, lack in physical resources, and, by nature of newness, have no historical reputation for reference. The entrepreneurs of these small new firms may have to seek resources from the outside through their social networks.

The main theme of the study is to empirically investigate the impact of the external networks, the initial social networks in particular, to the start-up success of small firms in Hong Kong. The second objective is to determine whether there is any interaction effect of the entrepreneur's networking capability on the relationship between the external network structure and the start-up success of small firms.

The empirical results provide evidence that some initial network conditions are positively associated with the success of small business start-up in Hong Kong.

In other words, the proposition that initial external networks have positive impact on the success of the start-up small business is partially confirmed.

This research represents one approach to the study of the impacts of external networks on the start-up success of small firms. It offers some empirical evidence to support that there are positive impacts of the structural and relational dimensions of the external networks on the start-up success in the small business context in Hong Kong. There are also non-conclusive findings for certain network constructs such as trustworthiness and the size of weak tie network that these constructs statistically do not support the social capital theory's proposition for their positive contribution to the start-up success. Nevertheless, the conclusion may be affected by the fact that the sample size of the study is small and small effect components may not be statistically detectable. As with this study, future studies should continue to refine and identify more dimensions and forms of social capital so as to enable social capital theory to be more applicable to the context of small business start-up.

This research offers no empirical evidence to support that the networking capability of entrepreneurs can positively enhance the effect of the initial network structure on the start-up success of small firms. On the contrary, there is a significant negative effect from the interaction of the organization and coordination capability of entrepreneurs and the size of strong tie network on start-up success. Future studies may want to continue to systematically test the interaction effect of the networking capability of entrepreneurs with other forms of social capital, or to identify some other types of capabilities of entrepreneurs for the start-up success analysis.

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Appendix A – Sample questionnaire

Questionnaire on Business Startup Success
成功創業問卷

Please put numbers, circle **or mark** X **at the answer.**
請填上數字、圈出或用 X 標示答案。

A. Strong ties 緊密關係 (Questions 問題 1 – 8)

1   <u>How many</u> close friends or frequently interconnected individuals did you contact for support or assistance regarding any aspect of your business during the first 6 months of start up ?
在你創業最初六個月中，你曾為新公司去接觸<u>幾多個</u>親密朋友或與你頻繁來往的人，尋求任何與業務有關的支持或協助?

_____ (Please fill in a number 請填上數字)

  1.1   How useful to your new business was the assistance or support you received from them? 他們給你的支持或協助對你新公司的建立有多大用處?   1 2 3 4 5

  1= not useful 無用;   2= little useful 少用處;   3=somewhat useful 稍微有用處;
  4= useful 有用處;   5= very useful 非常有用處.

2   <u>How many</u> immediate family members (such as spouse, parents, brothers and sisters) did you contact for support or assistance regarding any aspect of your business during the first 6 months of start up?   在你創業最初六個月中，你曾經為新公司而去接觸<u>幾多個</u>直系親屬(如你伴侶，父母，兄弟姊妹等)，尋求任何與業務有關的支持或協助?

_____ (Please fill in a number 請填上數字)

  2.1   How useful to your new business was the support or assistance you received from them? 他們給你的支持或協助對你新公司的建立有多大用處?   1 2 3 4 5

  1= not useful 無用;   2= little useful 少用處;   3=somewhat useful 稍微有用處;
  4= useful 有用處;   5= very useful 非常有用處.

3   <u>How many</u> relatives (such as uncles, aunts, cousins, kin) did you contact for support or assistance regarding any aspect of your business during the first 6 months of start up ?
在你創業最初六個月中，你曾經為新公司而去接觸<u>幾多個</u>親戚和親屬(例如你的叔伯，姑表長輩、平輩表兄弟，堂兄弟姊妹等)，尋求任何與業務有關有關的支持或協助?

_____ (Please fill in a number 請填上數字)

  3.1   How useful to your new business was the support or assistance you received from them? 他們給你的支持或協助對你新公司的建立有多大用處?   1 2 3 4 5

  1= not useful 無用;   2= little useful 少用處; 3=somewhat useful 稍微有用處;
  4= useful 有用處;   5= very useful 非常有用處.

Questions 4 to 8: Please circle or mark X at the number representing the degree of agreement
  4 至 8 題: 請圈出或用 X 標示你同意程度的數目字:

  1= strongly disagree 極之不同意;   2=disagree 不同意 ; 3=somewhat disagree 稍微不同意;
  4=neutral 中性; 5=somewhat agree 微同意; 6= agree 同意;   7=strongly agree 極之同意

Prior to seeking information/advise from the above strong-tie contact persons (persons in questions 1 to 3): 在我向上述有緊密關係的人(　　1　　3　　)尋求資訊/建議之前:

4	I assumed the person would always look out for my interests 定該人經常會考慮到我的利益。	1 2 3 4 5 6 7
5	I assumed that the person would go out of his/her way to make sure I was not damaged or harmed. 我假定該人會盡力確保我不會因而招致損害或傷害	1 2 3 4 5 6 7
6	I felt the person was genuinely concerned about my success 我相信該人真正關心我的成功	1 2 3 4 5 6 7
7	I believed the person approach his/her job with professionalism and dedication. 我相信該人會用其專業和專注的態度做他/她的工作。	1 2 3 4 5 6 7
8	Given the person's track record, I had no reason to doubt the contact's competence and ability to prepare me a good answer to my enquiry. 根據該人過去的紀錄，我沒有理由懷疑該人的能力和能夠給我準備好答案	1 2 3 4 5 6 7

B. Weak ties 脆弱關係 (Questions 問題 9-18)

9   Hong many acquaintances or general business contacts did you contact for support or assistance regarding any aspect of your business during the first 6 months of start up?
在你創業最初六個月中，你曾為新公司而去接觸幾多個普通認識或謹因業務而接觸的人以尋求任何與業務有關的支持或協助?

_____ (Please put in a number 請填上數字)

9.1   How useful to your start up business was the support or assistance you received from them?　他們給你的支持或協助對你新公司的建立有多大用處   1 2 3 4 5

1= not useful 無用;　　2= little useful 少用處;　3=somewhat useful 稍微有用處;
4= useful 有用處;　　5= very useful 非常有用處.

10   How many formal or informal organizations (such as customer organizations, supplier organizations, agents, competitor organizations, trade associations, commercial institutions, alumni, social or voluntary organizations) did you contact for assistance regarding any aspect of your business during the first 6 months of active start up?　在你創業最初六個月中，你曾經為新公司而去接觸幾多個正式或非正或的組織(包括客戶，供應商，代理，行內公司，商會，商務組，學會，社區或自願團體組織等) 以尋求任何與業務有關協助?

_____ (Please put in a number 請填上數字)

11   How useful was the assistance or support you received from business organizations?
商業組織給你的支持或協助對你新公司的建立有多大用處?   1 2 3 4 5
1=not useful 無用;　　　　2= little useful 少用處;　3=somewhat useful 稍微有用處;
4=useful 有用處;　　　　5= very useful 非常有用處.

12   How useful was the assistance or support you received from non-business organizations?
非商業組織給你的支持或協助對你新公司的建立有多大用處?   1 2 3 4 5
1= not useful 無用;　　　　2= little useful 少用處;　3=somewhat useful 稍微有用處;
4= useful 有用處;　　　　5= very useful 非常有用處.

Questions 13 to 18: Please circle or mark X at the number corresponding to your degree of agreement. 13 至 18 題: 請圈出或用 X 你同意程度的數目字。

1=strongly disagree 極之不同意; 2=disagree 不同意; 3=somewhat disagree 稍微不同意;
4=neutral 中性 5=somewhat agree 稍微同意; 6= agree 同意 7=strongly agree 極之同意

Prior to seeking information/advise from your above acquaintance or organizational contacts 在我向上述組織和普通認識人士尋求資訊或建議之前:

13	I assumed they would always look out for my interests 我假定他們經常會考慮到我的利益	1 2 3 4 5 6 7
14	I assumed that they would go out of his/her way to make sure I was not damaged or harmed. 我假定他們會盡力確保我不會因之而招致損害或傷害	1 2 3 4 5 6 7
15	I felt they were genuinely concerned about my success. 我感到他們真正關心我的成功	1 2 3 4 5 6 7
16	I believed they approach their jobs with professionalism and dedication. 我相信他們用專業和專注的態度對做他們的工作	1 2 3 4 5 6 7

C Network Diversity 網絡差異 (Question 問題 17 – 20)

1=strongly disagree 極之不同意; 2=disagree 不同意 ; 3=somewhat disagree 稍微不同意;
4=neutral 中性 5=somewhat agree 稍微同意; 6= agree 同意; 7=strongly agree 極之同意

17	The people that I contacted for assistance in the first 6 months of start up were highly diverse in terms of their <u>occupations</u>. 在我創業頭六個月,我為新公司而去接觸的人的<u>職業差異</u>非常之大	1 2 3 4 5 6 7
18	The people that I contacted for assistance in the first 6 months of my startup were highly diverse in terms of their <u>industries</u>. 在我創業頭六個月,我為新公司而去接觸的人的<u>工業界別差異</u>非常之大	1 2 3 4 5 6 7

19 Please circle or mark X at the <u>occupations</u> of your contacts 請圈出或用 **X** 所接觸的人的職業

o Management 管理人員　　o businessman (owners) 商人/企業主　o office staff 寫字樓職員;

o teachers 教職員　　　　o sales & marketing 銷售/市務人員　 o medical 醫療人員 ;

o accountant 會計　　　　o finance & insurance　　　　o civil service 公務員;

o customer service 客戶服務 o purchasing 採購人員　　　　o engineering 工程人員

o designer　　　　　　　o other professionals 其他專業人士　o self employ 自顧人士

o Others 其他職業 _____ (please put the number of occupations 請填其他職業的數目)

20 Please circle or mark X at the <u>industries</u> of your contacts 請圈出或用 X 標示你所接觸的人的<u>行業</u>

o Manufacture 生產業　　o real estate　　　　　o I/E or trade 進出口或貿易

o education 教育　　　　o finance/insurance 金融保險　o construction

o retail & wholesale　　　o IT　　　　　　　o social service 社會服務

o transportation　　　　o public utility　　　　o advertising

o food & catering　　　　o accounting 會計　　　o hotel service

o legal 法律界　　　　　o communications　　　o government

o consultancy   o public media   o banking

o medicine   o engineering   o caring

Others _____ (please put the number of categories 請填行業類別的數目)

D. Networking capacity 人際網絡才能 (Questions 問題 21 – 38)

1=definitely not like me 絕對不似我; 2=not like me 不似我; 3=somewhat not like me 稍微不似我;
4=neutral 中性 5=somewhat like me 稍微似我; 6=like me 似我; 7=exactly like me 完全似我

Social perception

21   I am a good judge of other people.   1 2 3 4 5 6 7
     我是一個對他人有良好判斷力的人

22   I can usually recognize other's traits accurately by observing their   1 2 3 4 5 6 7
     behavior. 我經常能由觀察他人的行爲而準確認知道他們的性格特點。

23   I can usually read others well – tell how they are feeling in a given   1 2 3 4 5 6 7
     situation. 我經常能很好地解讀他人的意念，並能說出他們在某種情境
     下的感受。

24   I can tell why people have acted the way they have in most situations.   1 2 3 4 5 6 7
     在大多的情況下，我都能說出爲何人們會做出他們的那種行爲。

25   I generally know when it is the right time to ask someone for a favor.   1 2 3 4 5 6 7
     我通常知道何時是向某些人尋求協助的最洽當時機。

Social adaptability

26   I can easily adjust to being in just about any social situation.   1 2 3 4 5 6 7
     差不多在任何社交場合，我很容易就能適應。

27   I can be comfortable with all types of people – young and old, people   1 2 3 4 5 6 7
     from the same or different backgrounds as myself.   我可以從容地與
     任何類別的人交往 --- 年青人、老年人，與我相同背境或不同背境的
     人。

28   I can talk to anybody about almost anything.   1 2 3 4 5 6 7
     我能向任何人談論幾乎任何事物。

29   People tell me that I'm sensitive and understanding.   1 2 3 4 5 6 7
     人家 說我對人敏感並體會他人。

30   I have no problems introducing myself to strangers.   1 2 3 4 5 6 7
     我可以毫無困難地向陌生人介紹我自己。

Expressiveness

31   People can always read my emotions even if I try to cover them up.   1 2 3 4 5 6 7
     就算我極力去遮掩，人們時常能察覺到我的情緒。

32   Whatever emotion I feel on the inside tends to show on the outside.   1 2 3 4 5 6 7
     無論我內心的情緒如何，都傾向於表現出來。

33   Other people can usually tell pretty much how I feel at a given time.   1 2 3 4 5 6 7
     他人時常能夠說出我在某特定時刻的感受。

34   I am often concerned about what others think of me.   1 2 3 4 5 6 7
     我常關注他人對我的看法。

Impression management

35   I'm good at flattery and can use it to my own advantage when I wish.   1 2 3 4 5 6 7
     我善於說人家愛聽的話並能按我心意把它用於對我有利的事情上。

36   I can ready seem to like another person even if this is not so.   1 2 3 4 5 6 7
     雖然不是真的，但我卻能迅速準備得好像喜歡某人一樣。

Network resource organization & coordination skills

37 I make resource allocation decisions that achieve maximum results.   1 2 3 4 5 6 7
    我所作出資源分配的決定可取得最好成果

38 One of my greatest strengths is organizing resources and coordinating   1 2 3 4 5 6 7
    tasks. 我的最大強項是組織資源和協調工作

E. Success measures 成功計量 (Questions 問題 39 - 42)

Please circle or mark X at the number best estimating how your firm's success compared to closed competitors of similar size and nature of your firm over the first 3 years of start up.
相對同規模同性質的競爭對手，請圈出或用 X 標示你認爲最能反映你所建立的公司在頭三年的成就。

39 Has been growing sales turnover in the first 3 years compared to competitor of same size and nature:
    頭三年的銷售增長與同規模同性質的對手公司比較:

More slowly		At about the same rate			Much faster	
比對手慢		和對手差不多一樣速度			比對手快	
1	2	3	4	5	6	7

40 Average sales growth in your 2nd and 3rd year compared with your first year sales
    相對第一年的銷售，第二及第三年的平均銷售增長:

0% growth	Below 10%	10% - 29%	30% - 59%	60% - 99%	100% -150%	Above 150%
無增長	10%以下					超過 150%
1	2	3	4	5	6	7

41 Has had profitability in the first 3 years compared to competitor of same size and nature?
    頭三年所賺得利潤與同規模同性質對手公司比較:

Less profitable		About equally profitable			More profitable	比
比對手利潤少		和對手差不多利潤			對手利潤多	
1	2	3	4	5	6	7

42 Average profitability of your business in the first 3 years.
    你公司頭三年的平均利潤:

Much loss		Break even			Very profitable	利
虧蝕很大		無賺無蝕			潤非常好	
1	2	3	4	5	6	7

43 How do you rate the overall success of your firm in the first 3 years compared to your expectation:
    相對你成功創業的期望，你如何評估你公司在頭三年的整體成功:

Less successful		About equally successful			More successful	
低於你成功的望期		和你期望差不多			比你期望更成功	
1	2	3	4	5	6	7

F. Control parameters 對照參數

Put numbers 請填上數字

1 How many years your firm has been established?   ?

_____

2 Number of people working full time in your Hong Kong firm in the first year?
   開業頭一年有多少人全職在你香港公司工作 (包括你本人)？   __ _____

3   At the end of first three years, how many people working full time in your H.K. firm?
開業三年後，有多少人全職在你香港公司工作 (包括你本人)？ _____

4   How many years of work experience do you have before startup?
在你創業前你有多少年工作經驗? _____

5   How many years of experience in your industry do you have before startup?
在你創業前你有多少年你目前從事的行業經驗? _____

6   How many years of managerial experience do you have before startup?
在你創業前你有多少年管理工作經驗? _____

7   Please circle or mark X at the industry your business belong to:
請用圈出或用 X 標示你公司的從事的行業：

o Manufacture 生產業	o real estate	o I/E or trade 進出口或貿易
o education 教育	o finance/insurance 金融保險	o construction
o IT/Telecom /	o wholesale	o transportation
o advertising	o food & catering	o accounting 會計
o legal 法律	o retail	o consultancy
o technology	Others _____	

8   Please circle or mark X at your highest education level:
請圈出或用 X 標示你的學歷程度

o Primary 小學   o Secondary 中學   o post secondary 大專 o university or above 大學或以上

Summary copy of the results 調查結果綱領

If you want to receive a copy of the summary results, please indicate how to send it to you. 如果你想得到一份調查結果的綱領，請提供傳送給你的方式:

Name 姓名: _____

Email/fax/address 電郵/傳真/地址: _____

Thank you

Appendix B – Cover letter (Chinese & English)

日期:

成功創業問卷調查

尊敬的創業者:

　　我誠懇邀請閣下參與一項有關在香港成功創業因素的學術性問卷調查。 我是嶺南大學與澳大利亞 Curtin 科技大學合辦的工商管理博士研究生，研究內容是創業者創業初期的社會資本(人際網絡)與創業者本身的網絡社交能力分別對創業成功的關係。 深信這項研究結果不獨對企業家學術研究有幫助，而且對香港創業情況有更深入的了解。 研究的結果可與參與者分享。

　　問卷調查所得的資料純粹用於這項學術研究，資料會絕對保密。這項研究已穫得 Curtin 大學人文研究道德委員會認可，如有需要可以寫信或致電 Curtin 大學人文研究道德委員會查詢，地址是 Curtin University Human Research Ethics Committee, c/o Office of Research & Development, Curtin University of Technology, GPO Box U1987, Perth 6845, Australia, or 電話 (61 8) 9266 2784.

:

: <u>kkma@ln.edu.hk</u>
: 3020 6726
:

91035621

!

Date:

Dear

Re: Questionnaire Survey on the Success of Business Start Up

I am writing to invite you to participate a study about the success factors for new business start up: a study of external networks of small business in Hong Kong. I am a doctoral candidate of a joint academic programme organized by Lingnan University and Curtin University of Technology in Australia. The purpose of the study is to find out the impact of initial social capital (external network) of the entrepreneurs and their networking capability on the success of their new business start up.

The information obtained from the survey will be kept confidential and used only for this academic research. This study has been approved by the Curtin University Human Research Ethics Committee.   If needed, verification of approval can be obtained by either writing to the Curtin University Human Research Ethics Committee, c/o Office of Research & Development, Curtin University of Technology, GPO Box U1987, Perth 6845, Australia, or telephone (61 8) 9266 2784.

Please take a few minutes (approximately 15 minutes) to complete the questionnaire and return it by either email or fax or mail it to Lingnan University address below:

Email: kkma@ln.edu.hk
Fax: 3020 6726
Address: Victor Ma c/o DBA Programme, Programme Office, Lingnan University, Tsuen Mun, NT.

If you want to have a copy of my research result summary, please indicate your contact details at the end of the questionnaire, I'll furnish you a copy as soon as the results are ready. Should you have any question regarding this survey, please feel free to contact me at my phone 9103 5621. Your participation in this research study is highly appreciated.

Sincerely,

_____
Victor K K Ma
Doctoral Candidate

Appendix C -- Fax reminder in Chinese

成功創業問卷調查

尊敬的創業者:

春節前我曾給閣下寄上一封信及一份問卷，誠懇邀請閣下參與一項有關在香港成功創業因素的學術性問卷調查。 不知閣下是否早已回覆? 如果尚未回覆，煩請閣下 深信這項學術調查不獨對企業家學術研究有幫助，而且能爲香港創業情況提供參考價值，研究的結果可與參與者分享。

問卷調查所得的資料純粹用於這項學術研究，資料會絕對保密。

:

    :   kkma@ln.edu.hk
    :   3020 6726
    :

     請盡量於本月底前把問卷寄回。   !

Victor Ma)

P.S. – 如果早已回覆，不用理會此信，謝謝你的幫忙。