Business owners' network size and business growth in China:

The role of comprehensive social competency

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Abstract

We present a model that explains how comprehensive social competency (made up of three components – social skills, proactive and elaborate social strategies, and relational perseverance) is related to business people' network development, and how social networks in turn are related to business growth. We conducted two studies with Chinese small business owners, - one in the capital city Beijing ($N = 133$) and a second one in the less developed rural region Xunyi ($N = 78$). Comprehensive social competency was consistently related to network size and business growth. In addition, government network size was related to the business growth since start-up in both studies (employee growth in Study 1 and personal asset growth in Study 2), but business network size was not related to business growth. Government network size also functions as a partial mediator between comprehensive social competency and business growth since start-up. Some differences are found between the rural area and the urban center.

Keywords: comprehensive social competency, *Guanxi*, network development, business growth, entrepreneurship

1. Introduction

Social networks have been shown to be important for achieving entrepreneurship success (e.g., see Hoang and Antoncic 2003 for a comprehensive review); this is particularly so in China, as the concept of *Guanxi* (which is a special relationship between people in China) suggests (Peng and Luo 2000; Tung and Worm 2001). One popular Chinese saying states that 'Who you know is more important than what you know' (Yeung and Tung 1996).

Much of the research on social networks is concerned with structural characteristics. In contrast to the general area of social networks, the research on entrepreneurship has emphasized the active nature of the entrepreneur and his or her influence on networks (Baron and Markman 2000; Johannisson 2000). Most social network studies focus on the outcomes of networks (e.g., business growth) rather than on their potential antecedents. In this paper we concentrate on the psychological antecedents of networks, in particular, on how entrepreneurs and business owners actively enlarge social networks in order to achieve higher business growth. Although networks have been discussed from a sociological perspective (Ibarra 1993; Yeung and Tung 1996; Chen and Chen 2004), little is known about individual antecedents influencing network size. A second basic tenet of our model is the question of how owners' socially competent behavior is related to business growth. Taking these into consideration, we suggest a mediator model that has not been tested before.

The basic model underlying this article is described in Figure 1. We argue that comprehensive social competency, which is made of three components–social skills, proactive and elaborate social strategies and relational perseverance–is particularly useful for achieving higher business growth; in addition, we propose that enlarging social

networks is an important mediator of this relationship. In the following, we first review the concept of social networks and the active nature of network development, then discuss the relationship of comprehensive social competency with social network size, and, finally, describe why broader social networks should be associated with higher business growth.

2. Theoretical background and literature review

2.1 Social networks and the active nature of network development

Broadly speaking, social networks are defined by a set of actors (individuals or organizations) and a set of linkages between these actors (Brass 1992). In this paper we focus on the personal networks of individual business owners because in small business they are the basis of other forms of social networks (e.g., interfirm networks) (Johannisson 2000). Networks directly useful for business owners are business networks (related to other business agents in the market) and networks with government officials. Business networks are related to the supply chain and to competitors and, thus, include relationships with suppliers, customers, competitors, business partners, and investors. Government networks include relations with government officials (political leaders, officials in industrial bureaus, officials in regulatory bodies of commercial administration, officials in legal institutions such as the police department and inspection system, and officials in state-owned banks).

Social networks have been theorized to play a critical role in the entrepreneurial process since Aldrich and Zimmer (Aldrich and Zimmer 1986; 1986). More than 70 research articles related to the new venture creation process and small to medium-sized firms have been published in this area (Hoang and Antoncic 2003). However, there were only few process-oriented studies that concentrated on network development (Hoang and Antoncic 2003; Jack, Drakopoulou Dodd et al. 2008). The literature has mostly

conceptualized networks as structural variables that affect other variables (e.g., firm growth); however, little is known about how networks are developed. With the findings presented in this paper, we build upon this literature by looking at one particular issue of the process of network development: The active approach of business owners toward the social environment as one part of actively developing a network.

Social network development can mean many things, such as enlargement of network size, the improvement of network quality, or the optimization of network structure, etc. We focus on the enlargement of social network size because it is the most obvious and sensitive index of the development of a social network. We define network size as the number of people that the business owners know and interact with personally (Greve and Salaff 2003).

The literature on entrepreneurial network development suggests that it is function of venture lifecycles (Steier and Greenwood 2000), industry and region (Johannisson 1996), and resource needs (Hite and Hesterly 2001). Batjargal (2006) showed that social network development is based on initial network size and the revenue growth of previous years. It is necessary to emphasize the active nature (or internal factors) of network development in the entrepreneurship literature (Anderson and Jack 2002; Batjargal 2006). In general, there is a large body of literature that has argued for the active nature of entrepreneurship (Crant 1995; Dess, Lumpkin et al. 1997; Frese and Fay 2001; Sarasvathy 2001; Krauss, Frese et al. 2005; Frese, Krauss et al. 2007). The active orientation of business owners should also play an important role in the development of networks (Baron and Markman 2000; Johannisson 2000; Frese and Fay 2001). In other words, entrepreneurs, as interactive agents, create the conditions for the development and growth of their firms: The environment of the venturing process is enacted (the "organizing context", see Johannisson (1991; 2000). In this paper we use a psychological theory of how owners develop their

networks and actively structure their social situation. By doing so, we are not concerned

with structural issues although we do not negate the fact that people may have been born or

raised into structural networks by family and early social environment.

Our psychological perspective argues that active social behavior is based on three

concepts: Social skills to interact with others effectively (social skills), employment of

approaches to actively enhance and broaden networks and manipulate the social

environment in one's own interests (proactive and elaborate social strategies), and

overcoming difficulties when there are problems to achieve social goals (relational

perseverance). Furthermore, these three concepts can be integrated into a higher-level

variable: comprehensive social competency.

Social skills

Social networks are partly the results of actors' social skills; one important key to

entrepreneurial success is rooted in the ability to develop and maintain a personal network

(Johannisson 1988; Baron and Markman 2000). Social skills refer to "the highly specific

patterns of learned observable behavior, both verbal and non-verbal, through which we

influence others and attempt to meet our needs" (Gesten, Weissberg et al. 1987, p. 27).

Individuals with high social skills can leave a good impression on others, persuade others

to do things that are useful to the entrepreneur; moreover, social skills will be functional

when getting to know people and, thereby help to enlarge social networks (Baron and

Markman 2000). Social skills are related to an active approach in the social arena because

they are needed to produce effective results. Being effective in the social arena requires

social skills (Bigelow 1995). Thus, social skills will make it easier to enlarge social

networks and achieve higher growth. Social skills include at least three specific skills

(Baron and Markman 2003): (a) social perception which refers to the accuracy in perceiving traits, intentions, and motives of others, (b) social adaptability which refers to the ability to adapt to a wide range of social situations, and (c) expressiveness which refers to the ability to express one's emotions clearly to generate enthusiasm in others.

Proactive and elaborate social strategies

High social skills are necessary for network development, but may not be sufficient. In addition, entrepreneurs have to use proactive and elaborate social strategies to develop networks (and not just be able to behave skillfully). The following concepts are based on the personal initiative concept which has been developed for individual behavior and which is extended here to the social arena (Frese and Fay 2001).

We use social strategies in the sense of behavioral strategies of the individual owner (in contrast to firm strategies) (Van Gelderen, Frese et al. 2000). Social strategies are the behavioral plans applied to social interactions to achieve one's goals. Social strategies mainly deal with the issues of "what interactions, with whom, in what order and when are needed to enable one to achieve an objective" (Guirdham 1990, p. 400). Human beings are active agents (Cranach and Kalbermatten 1982; Frese and Zapf 1994). They use social strategies to deal with challenging social situations (Nurmi, Tovivonen et al. 1997), and these strategies need to be proactive. Proactive implies that future opportunities and problems are prepared for at the present time (Frese, Krauss et al. 2007). Proactive and elaborate social strategies are defined as behavioral plans applied to social interactions to achieve one's future goals by actively developing social relationships and wisely manipulating social opportunities. Proactive and elaborate social strategies usually use long-term and elaborate plans to guide what one will say and do in social situations (Frese,

Krauss et al. 2007). They involve the active and intentional initiation of social contacts which leads to the broadening of one's social networks for future use. In addition, proactive and elaborate social strategies also help to actively improve social skills continuously. Thus, social network size and business growth are enhanced by proactive and elaborate social strategies.

Relational perseverance

Strategies need to be implemented and in implementation barriers and difficulties need to be overcome (e.g., conflicts and tensions may appear, plans may not work out at first, contacts may need a long time frame to be developed). In addition, the network tie itself in the business setting is usually the outcome of repeated interactions (Johannisson 2000). For example, salespeople know the importance of persistence and regular contacts with their important clients. Relational perseverance is a derivative from the personal initiative literature called 'overcoming barriers' (Frese and Fay 2001) applied to the social arena. Relational perseverance means persistence and not giving up easily when confronted with difficulties in social interactions. Persevering, when developing social relationships, enhances network size.

Comprehensive social competency

There is a common core behind these three psychological variables: social competency. Comprehensive social competency implies that one can maneuver the social world to achieve one's goals–one can only achieve this when there are good skills, social strategies, and perseverance. This common core appears because there is some redundancy between the three variables (cf. Bigelow 1995). The three psychological predictors also

may have a compensatory function: Good social skills may compensate for lack of proactive and elaborate social strategies and relational perseverance. Similarly, a high degree of proactive and elaborate social strategies and relational perseverance may compensate for a lack of social skills, etc. While we emphasize the common core here, we do not discount that there are unique parts to each one of these three constructs (which may lead to unique predictions). Comprehensive social competency enhances network size because all three components enhance network size (cf. Figure 1).

Hypothesis 1: Comprehensive social competency is positively related to business owners' social network size.

INSERT FIGURE 1 ABOUT HERE

2.2 Comprehensive social competency and business growth

As the social arena influences business growth, the three variables that make up comprehensive social competency are related to business growth. Business growth is often utilized as a dependent variable in entrepreneurship research (Gartner 1990; Timmons and Spinelli 2003). We expect comprehensive social competency to influence business growth directly and indirectly through social network size (cf. Figure 1). Similar relationships have been proposed by Baron and Markman (2000). Social skills, proactive and elaborate social strategies, and relational perseverance may produce positive outcomes, for example, by making 'cold calls' to potential customers or other relevant people, influencing their feelings and impressions, or persuading them successfully. They also allow owners to actively make use of the social opportunities and resources that social networks afford (Johannisson 1991). All of this may be useful in raising capital, gaining customers, doing

negotiation, and forming alliances, etc. This, in turn, may lead to high business growth.

Hypothesis 2: Comprehensive social competency is positively related to business

growth.

2.3 Social network size and business growth

Not all of the literature on social network has concentrated on the size of the social

network. As discussed above, there is a large body of literature on network structure, on the

content of the network, and the processes by which networks are effective (e.g., trust)

(Hoang & Antoncic, 2003; (Drakopoulou Dodd and Patra 2002). We propose that network

size is a central variable because larger social networks can provide a wider degree of

differing information and a wider net of usable information to detect financial and business

opportunities and profit from them (that is obviously related to the argument of weak ties,

(Granovetter 1973); a large social network is also able to provide more material resources

(e.g., direct help, labor, and money) and emotional support (e.g., encouragement, comfort,

and so on) than a smaller social network (Zhao and Aram 1995; Bruederl and

Preisendoerfer 1998). Finally, there may be reputation gains as a result of a large network.

This does not mean that the other aspects of networks are unimportant; it just means that

network size is an important variable by itself because it opens up resources and

opportunities which may lead to business growth.

The empirical literature supports this supposition and shows relationships between

social networks and success (Hansen 1995; Uzzi 1997; Bruederl and Preisendoerfer 1998;

Bian 2002; Kodithuwakku and Rosa 2002; Davidsson and Honig 2003; Greve and Salaff

2003). Yet on the other side, there are also some studies that do not show a significant

relationship (Cooper, Folta et al. 1991; Aldrich and Reese 1993; Johannisson 1996). One of

the more important issues may be the business context. Thus, we propose the following

hypothesis for the context of China (we will discuss this point further in the *Chinese*

Context and *Business Guanxi and Government Guanxi* sections):

Hypothesis 3: Social network size is positively related to business growth.

2.4 Mediator effect

We expect to find a part of the effects of comprehensive social competency (social

skills, proactive and elaborate social strategies, and relational perseverance) on business

growth work via social network size (cf. Figure 1). We are not aware of any study that has

empirically tested the mediating role of social network on the relationship between the

psychological variables social competency and business growth. We, therefore, think that

our examination of the mediator effect is a useful addition to the literature. Social skills,

proactive and elaborate social strategies, and relational perseverance (social competency)

increase network size, which, in turn, help business to grow. Social network size usually is

the accumulated result of continuous social interactions during a long time period.

Proactive and elaborate social actors build networks before they need them for their

business. Owners with relational perseverance and high social skills are continuously

working on improving their networks in a manner that others find congenial and positive.

Empirically, the organizational level social networks were found to mediate the relationship

between network-developing human resources practices (as one part of strategic human

resources management) and firm performance (Collins and Clark 2003). As discussed

above, social competency has additional (direct) influence on business growth over and

above social network size. Social network size is not the only network variable that

influences success. For example, there is good evidence to suggest quality in the sense of

trust is an important variable of networks as well (Saxenian 1991; Uzzi 1997). We propose

that network size is a convenient summary concept related to entrepreneurship. There must

be a minimal amount of trust to be able to make use of a large network–otherwise it does

not have functional value and business owners may not be able to keep up the network.

Thus, keeping a network functional implies a certain degree of quality. Moreover, the social

arena is larger than just networks. For example, direct effective social influence is

necessary for success; the direct social influence (e.g., persuasive powers when dealing

with a customer) does not necessarily work via social networks; therefore, social network

size is not a full but only a partial mediator.

Hypothesis 4: Social network size is a partial mediator of the relationship between

comprehensive social competency and business growth.

3. The Chinese context

Social networks are deeply embedded in local culture and historical traditions and

they are shaped by the culture (Drakopoulou Dodd and Patra 2002; Batjargal 2006).

Network relationships in the Chinese context have been described as *guanxi*. *Guanxi*, in its

simplest meaning, is a special personal relationship between two people in the Chinese

context. Chinese *Guanxi* can be regarded as a strategically constructed network of personal

connections (Yan 1996). *Guanxi* can also be described as the process of developing social

interactions which involves a series of pre-planned activities that often involve

intermediaries who help in the process of developing a network, for example, by

introducing business owners to the right people (Fan 2002; Chen and Chen 2004). As these

definitions suggest, *Guanxi* is not fixed once and for all but is dynamically developed.

Thus, it is makes sense to study the psychological antecedents of *Guanxi* development and

maintenance in the Chinese context. Although *Guanxi* is not the same as social networking in the Western societies (Hackley and Dong 2001; Jansson, Johanson et al. 2007), both concepts share a number of common characteristics.

Network development is of particular importance in China. At least two contributions to the literature speak for this assumption. The first contribution is based on cross-cultural differences which describes China as a collectivistic society (Gelfand, Bhawuk et al. 2004). The second argues that China, as many transitional and developing countries, lacks formal institutional rules and transparent government (Redding 1990; Xin and Pearce 1996; Jansson, Johanson et al. 2007).

Collectivism underlines the importance of *guanxi* in the Chinese context. Through *guanxi* a collective is developed. Once *guanxi* is established, one can ask favors from each other continuously (Xin and Pearce 1996; Yeung and Tung 1996). Further, a set of *guanxi* relations makes up a *guanxi* network (in Chinese, *guanxi wang*), which is central to the Chinese culture (Hwang 2000; Buckley, Clegg et al. 2006). Chinese may use highly individualized strategies to deal with collectivistic demands. They may try to build their social network and still be self-centered in this endeavor (Fei 1948; King 1991). The Chinese Sociologist Xiaotong Fei (1948) gave this feature a name '*cha-shiuh-ger-iyu*' (the framework of network circle differentiation). King (1991, p. 67) also argues that "the Confucian individual is more than a role player mechanically performing the role-related behavior prescribed by the social structure"; "in relation construction it is the individual who is capable of defining roles for himself and others, and is always at the center". In other words, the Chinese individual is the "architect in relationship construction".

The second body of *guanxi* literature refers to lack of formal institutional rules and transparent government in China (Redding 1990; Wank 1996; Xin and Pearce 1996;

Jansson, Johanson et al. 2007). Whenever formal rules are weak it means that one has to

compensate for this fact by establishing good personal relationships with local authorities

and other people who hold power over scarce resources. This is particularly so for the less

powerful participants in such a society–thus, small business owners need to develop

guanxi. Given these good relationships, transactions run smoothly (Alston 1989; Xin and

Pearce 1996; Yeung and Tung 1996; Tung and Worm 2001; Michailova and Worm 2003).

4. Business *guanxi* and government *guanxi*

INSERT TABLE 1 ABOUT HERE

Guanxi can be classified into different types (Hwang 1987; Yang 1994; Fan 2002;

Chen and Chen 2004; Zhang and Zhang 2006) (see Table 1 for the details). *Guanxi* related

to family members, relatives, classmates, village of heritage, and so on, are largely fixed

before business start-up. In this paper we concentrate on the *guanxi* network developed in

the entrepreneurial process or, in other words, the social environment 'enacted' by business

owners (Johannisson 1988). In this respect, two types of *guanxi* are particularly relevant for

business owners: business *guanxi* and government *guanxi* (Peng and Luo 2000; Fan 2002).

In general, both are consistent with the categories presented in bold type in Table 1. They

belong to instrumental ties (Hwang 1987), stranger *guanxi* (Yang 1994; Chen and Chen

2004), and are utilitarian oriented (Fan 2002; Zhang and Zhang 2006). Specifically,

business *guanxi* is largely established on market-based transaction which includes personal

connections with customers, suppliers, competitors, business partners, and investors, and

the like. "Good relationships with suppliers may help a firm acquire quality materials, good

services, and timely delivery. Similar ties with buyers may spur customer loyalty, sales

volume, and reliable payment. Moreover, good relationships with executives at competitor

firms may facilitate possible interfirm collaboration and implicit collusion, while

minimizing uncertainty" (Peng and Luo 2000, p. 488). Relationships with business partners

or co-founders may increase morale and competencies and, thus, strengthen the firm's

competitive advantage. Similarly, *guanxi* with investors helps owners to get sufficient

capital for small businesses.

Government *guanxi* in China may help to facilitate business transactions, reduce

bureaucratic pressures, and help to gain customers. It is also "a way to bypass laws and

regulations through personal connections with government officials and to obtain special

treatment or scarce resources" (Fan 2002, p. 554). Government *guanxi* includes personal

connections with governmental officials at different levels and with different bureaus.

Governmental officials have a high degree of power to approve projects, allocate resources,

and intervene in businesses' normal functioning (Xin and Pearce 1996; Peng and Luo 2000;

Tung and Worm 2001). Peng and Luo (2000) found that managers' ties with government

officials were significantly related to market share and return on asset, while managers' ties

to other managers were only related to market share.

Based on these considerations, we suggest social networks to be represented by and

large as *guanxi* networks in China. Therefore, the relationships of comprehensive social

competency should be similar for *guanxi* networks in China and for social networks in

other societies. To test whether our theory works in China we conducted two studies, one in

a developed urban region and a second one in a less developed rural region. The

assumption is that both collectivism and lack of formal rules are more prevalent in the rural

area (more on this later).

Study 1: Small business owners in an urban center (Beijing)

Methods

Sample

The sample was drawn with a random walk procedure. First, a random sample of 12 streets in Beijing was taken, which are populated by entrepreneurial businesses. Every business on these streets was visited. To reduce problems of liability of newness (Bruederl and Schuessler 1990), we only interviewed owners who had been in business for over four years. Also, only participants who had at least one employee were selected. In all, 133 small business owners agreed to participate in the study, which corresponds to a response rate of 33 percent. The most common reasons for refusing to participate were that the interview was too time-consuming (about 1 hour) and that it involved many sensitive questions (e.g., business growth). The first author (a native Chinese) did the interviews. The demographic and economic data of the participants in Study 1 are presented in Table 2.

INSERT TABLE 2 ABOUT HERE

Measurement

When measures were translated, we used the forward-backward double translation procedure to ensure the accuracy of the translation (Brislin 1970). First, a native speaker translated the measures into Chinese, and then a doctoral student majoring in English literature independently back-translated them into English. Differences between the original and the re-translated questions and response scales were discussed and resolved.

Social skills: We assessed social skills with three measures developed and validated by Baron and Markman (2003): social perception, social adaptability, and expressiveness. Each measure included 5 Likert-type items (e.g., 'I am a good judge of other people', 'I can easily adjust to being in just about any social situation', 'I am very sensitive to criticism from others') with a 5-point answer scale (1 = definitely not like me; 5 = exactly like me). Confirmatory factor analysis showed that the three-factor model with the factors social perception, social adaptability, and expressiveness did not achieve an acceptable fit (χ^2 = 153.77, df = 87, p < .001; RMSEA = .08, TLI = .73, CFI = .78). Expressiveness could not be distinguished as a separate factor. Although the two factors social perception (3 items) and social adaptability (5 items) could be reproduced as distinct factors, their correlation was high (r = .45, p < .001). Therefore, we combined the items. The resulting confirmatory factor analysis showed a good fit for the model with one latent factor (χ^2 = 35.39, df = 19, p = .01; RMSEA = .06; GFI = .96; CFI = .94) which we labeled 'social skills'. Cronbach's alpha reliability for this new measure was .75 (8 items).

Proactive and elaborate social strategies: We developed a 10 item measure for this study based on a similar measure utilized in a different context which was shown to have good construct validity (Frese, Krauss et al. 2007); it used a 5-point response scale (1 = definitely not like me, 5 = exactly like me): Proactiveness (i.e., the long-term and active nature of strategies, sample item 'I actively make friends with those people working in government') and elaboratedness (sample item 'I skillfully use intermediaries to introduce me to those people with whom I really want to associate', cf. Appendix 1 for the full measure). Factorial validity of our measure was determined in a two-step process. Exploratory factor analysis was first employed on half of a sample (N = 105; in this case, we combined the data of Studies 1 and 2). Both the Kaiser-Meyer-Olkin measure of

sampling adequacy (KMO = .87) and Barttlet's test of sphericity (χ^2 = 468.44, df = 45, P

< .000) showed that it was feasible to carry out such an exploratory factor analysis. The

results showed that 10 items loaded on the two factors as intended, and that these two

factors also can be interpreted as proactive social strategies and elaborate social strategies.

In all, 61.05% of the total variance was explained by these two factors. Second, a

confirmatory factor analysis was employed on the other half of the sample (N = 106). The

two-factor model fit the data adequately (χ^2 = 59.32, df = 34, P = .01; RMSEA =. 08; GFI =

.90; CFI = .94). The high correlation between proactive social strategies and elaborate

social strategies (r =. 58, p < .01) convinced us to combine the two factors. A second-order

confirmatory factor model also showed a good fit to the data (χ^2 = 56.72, df = 34, p < .001;

RMSEA =. 07; TLI = .93; CFI = .95). Therefore, the second-order factor model was

accepted. The new measure with 10 items was called proactive and elaborate social

strategies; Cronbach's alpha for this measure was .86 (10 items).

   Relational perseverance: Our measure of relational perseverance was based on an

interview using the overcoming barriers procedure developed and validated by Frese and

colleagues (Frese, Kring et al. 1996; Frese, Fay et al. 1997; Krauss, Frese et al. 2005). We

developed three scenarios relevant to the social interactions in business practice (e.g., the

resignation of a key employee, cf. Appendix 2), and asked participants to come up with

feasible solutions. Whenever participants gave a solution, a new barrier was introduced

('imagine this doesn't work') until participants could not come up with any further ideas.

Participants' answers were written down in detail during the interview and were later coded

by two independent raters who were trained to use the coding procedure. The number of

barriers that participants overcame and the degree to which the answers showed activeness

(which was rated on a 5-point scale) was averaged to get a single score for relational

perseverance (Cronbach's alpha for the measure was .83 in Study 1). Inter-rater agreement was $r = .89$. This is a sort of performance measure that is based on the concept of the situational interview that has been shown to have high validity in predicting future behavior of people (Latham and Saari 1984). We think that this measure is particularly valuable for assessing an active approach toward relationship management.

Comprehensive social competency: From a theoretical perspective, the three psychological variables social skills, proactive and elaborate social strategies, and relational perseverance share a common core, that is, they are facets of social competency. We tested this with a confirmatory factor analysis. We tested a model with three correlated latent factors. The latent factor 'social skills' consisted of the observed variables 'social perception' and 'social adaptation' (development of the measures, see above). The latent factor 'proactive and elaborate social strategies' comprised the observed variables 'proactiveness' and 'elaboratedness' (see above). The latent factor 'relational perseverance' comprised the three ratings for the three scenarios in the interview (see above). The fit of the model was good ($\chi^2 = 20.81$, df = 15, $p < .05$; RMSEA = .05; TLI = .97; CFI = .98). These results suggest aggregation–therefore, we aggregated the three psychological variables to form a single score of comprehensive social competency.

Network size: An ego-centered network method, that is, the social network that is only related to the participant him/herself was employed (Wasserman and Faust 1994; Greve and Salaff 2003). To measure network size (or number of *guanxi*), we first classified business *guanxi* and government *guanxi* into several subgroups and then asked participants to estimate how many people they knew in each subgroup. To include someone as his/her *guanxi*, the participant had to know this person's name and had to have had face-to-face interaction with this person during the past year. Business *guanxi* included the following

five subgroups: suppliers, buyers or customers, competitors, business partners or co-founders, and investors. Government *guanxi* included the subgroups: political leaders at various levels, officials in industrial bureaus, officials in regulatory organizations like the tax bureau and commercial administration, officials in legal institutions such as the police department, court and inspection system, and officials in state-owned banks. Finally, we summed up the numbers in all the respective subgroups as estimates of business network size and government network size.

Business growth: In general it is challenging to measure business growth (Davidsson and Wiklund 2000; Witt 2004) and this is particularly so in our context. Chinese small business owners do not often keep exact records of their budgets. Therefore, robust proxy measures of growth were needed with questions that the owners were able and willing to answer. We chose to measure growth with two indicators. *Employee growth*: We inquired about the *number of employees* in 2003 and the initial number of employees at start-up (the range of the initial number of employees is from 0 to 4). Our measure of *employee growth* was the result of using the number of employees in 2003 minus the initial number of employees at start-up. This is a sensitive and reliable indicator for measuring absolute growth of small and medium-sized enterprises (SMEs). Small and medium-sized enterprises are usually very careful not to hire unnecessary employees, so employee growth since start-up is quite consistent with the needs for their businesses and reflects business growth. Previous literature has also employed this indicator (e.g., see Bruederl and Preisendoerfer 1998).

Business growth in the past 3 years: The measure of business growth (Krauss et al., 2005) asked participants to report their business growth on profit, sales, and number of customers during the past three years on a 7-point scale. The 7-point scale was suggested

by the results of a qualitative pilot study in which we asked business owners about the

differentiations they naturally made in terms of growth and decline. Therefore, we used the

following 7 response possibilities: 'declined by more than 60%', 'declined between 60%-

30%', 'declined by less than 30%', 'the same', 'increased less than 30% ', 'increased 30-

60%' 'increased more than 60%'. A year-by-year comparison was made for the past three

years (2001, 2002, and 2003), resulting in 9 items that were averaged to produce a measure

of business growth. This measure is an aggregated index or causal indicator model (Bollen

and Lennox 1991; MacCallum and Browne 1993).

Control Variables

The existing literature has shown that several demographic and economic variables

influence business growth and network development: gender (Davidsson and Honig 2003;

Forret and Dougherty 2004), education (Bruederl and Preisendoerfer 1998; Frese 2000),

years of previous working experience (Frese 2000; Davidsson and Honig 2003), age of

business (or years of experience as business owners) (Davidsson and Wiklund 2002),

business sectors, and starting capital (Frese 2000). Therefore, these variables were also

included in our study as control variables. For gender, female was coded as 0 and male as

1; education was measured on a five-point response scale (1 = elementary school; 5 =

master's degree or higher); business sector was included as three dummy variables to code

manufacture, trade (retail and wholesale), and service; other business sectors (high-tech

enterprise and mixed types) were assigned as a reference category.

Environment difficulty: We included a summary measure of environmental

dynamism and munificence as a control variable. Environmental dynamism refers to the

instability or turbulence of an environment; munificence implies that the environment

provides support for business development which includes resources, opportunities, government policies, and so on (Baum and Wally 2003). The dynamism measure developed by Priem, Rasheed, and Kotulic (1995) and the munificence measure developed by Hambrick and Finkelstein (1987) were employed. Each measure includes 5 items (e.g., 'our firm must frequently change its products and practices to keep up with competitors', 'Our markets are rich in investment capital'). Participants rated the extent to which each statement is true for them on a 5-point scale (1 = definitely not like mine; 5 = exactly like mine). Munificence and dynamism were added together into a single index called *environment difficulty* because an environment low on munificence and high on dynamism implies that the environment is less difficult to handle (Cronbach's alpha was .53).

Network/family-friends: China is a family-oriented collectivistic society (Gelfand, Bhawuk et al. 2004). Family members and relatives usually provide starting capital, manpower, and encouragement for business owners. In addition, friends may also provide information, suggestions, and emotional support for business owners. They may act as intermediaries connecting business owners with other influential people who are in charge of resources (Fan 2002). Therefore, we included network/family-friends as a control variable. We measured network/family-friends directly in three subgroups and asked participants to estimate the number of family members, relatives, and non-business friends who had provided support during the process of building the business.

Analytical Approach

Due to the skewed distribution of network size and number of employees, logarithm transformations were used (Cohen, Cohen et al. 2003). This is often done with network data (cf. Greve and Salaff (2003)). We tested the mediating effect of social network size

following the procedure outlined by James and Brett (1984). The steps are: first, the

relationship between comprehensive social competency to network size variables

(Hypothesis 1); second, the relationship of comprehensive social competency to business

growth (Hypothesis 2); third, the relationship of network size to business growth

(Hypothesis 3). The crucial fourth step is to compare the relationship of comprehensive

social competency to business growth with and without including the mediator network

size. If including network size into the regression equation reduces regression coefficients

or explained variance of the independent variables significantly, network size can be

considered a mediator (Hypothesis 4).

In addition, multicollinearity was tested as part of the regression analyses using

multiple cut-off points. These tests did not reveal any problems of multicollinearity.

INSERT TABLES 3 AND 4 ABOUT HERE

Results

The intercorrelations for Study 1 (including means and standard deviations) are

presented in Table 3. As the measure of network size is transformed logarithmically, the

average government network size was around 20, and the average business network size

was around 100. There were a number of interesting relationships among the control

variables. Females worked more frequently in trade than males ($r = -.18$, $p < .05$); males

received more starting capital than females ($r = .23$, $p < .01$). Education was negatively

related to how long ago owners started their businesses ($r = -.28$, $p < .01$), but was

positively related to starting capital ($r = .24$, $p < .01$) and network/family-friends ($r = .21$, $p < .05$). Owners of manufacturing firms had higher starting capital ($r = .20$, $p < .05$) in

contrast to owners of trading firms who started their businesses with less capital ($r = -.23$, p < .05).

To test the hypotheses, we used hierarchical regression analyses (Table 4). Significant relationships were found for all control variables except gender and network/family-friends. Education was significantly related to government network size (β = .24, p < .01) and to business growth in the past 3 years (β = .27, p < .01). Age of business (or number of years as a business owner) was positively related to government network size (β = .19, p < .05), but negatively related to business growth in the past 3 years (β = -.22, p < .05). Number of years of previous working experience was negatively related to business growth in the past 3 years (β = -.17, p < .05) as well. Manufacturing industry was negatively related to business network size (β = -.28, p < .05). Trade and service industry were negatively related to government network size (β = -.27 and -.32, respectively, ps < .05). Starting capital was positively related to employee growth (β = .32, p < .01). Finally, environment difficulty was negatively related to business network size (β = -.20, p < .05), government network size (β = -.23, p < .01), and business growth in the past 3 years (β = -.18, p < .05).

Hypothesis 1 postulates that comprehensive social competency is positively related to network size. We tested this hypothesis with two models, using business network size and government network size as dependent variables (Models 1 and 2 in Table 4). The findings presented in Table 4 demonstrate that comprehensive social competency was significantly related to business and government network size (both βs = .32, ps < .01). Thus, Hypothesis 1 was confirmed.

Hypothesis 2 proposes that comprehensive social competency is positively related to business growth. We tested this hypothesis with two models, using business growth in the

past 3 years and employee growth as dependent variables (Models 3 and 4 in Table 4). In

both cases, comprehensive social competency was significantly related to business growth

(for business growth in the past 3 years β = .30, p < .01; for employee growth β = .24,

p< .01). Thus, Hypothesis 2 was confirmed.

Hypothesis 3 states that network size is related to business growth. Business network

size was not significantly related to any of business growth variables (β = .12, β = .10, n.s.;

Models 5 and 6 in Table 4). Government network size was not related to business growth in

the past 3 years (β = -.01, n.s.), but its relationship was marginally significant with

employee growth (β = .17, p < .10). Further, when business network size was excluded

from the regression analysis, government network size was significantly related to number

of employees (β = .19, p < .05; cf. Model 7 in Table 4). Thus, Hypothesis 3 was partially

confirmed.

Mediator effect

Hypothesis 4 predicts that network size mediates the relationship between

comprehensive social competency and business growth. Because of the insignificant

relationship between business network size and business growth, we only tested the

mediating effect of government network size and we only used employee growth as the

dependent variable. The findings (Table 4) inform us that government network size was a

partial mediator for the relationship between comprehensive social competency and

employee growth. Controlling for government network size reduced the regression

coefficient of comprehensive social competency predicting employee growth from .24 to .

21. The increment of R^2 (explained variance) was reduced from .04 to .03 (which was a

decrease of 25%). However, the regression coefficient remained significant. Thus, there

was some support for Hypothesis 4 for the dependent variable employee growth but no

support for the dependent variable business growth in the past 3 years; thus, the mediation

effect was one of partial mediation.

Discussion Study 1

Hypotheses 1 and 2 have fared well but Hypotheses 3 and 4 were not fully confirmed.

The results showed that our hypothesis on the relationship between network size and

business growth (Hypothesis 3) was true only for government network size and only for

one of the two business growth variables. In addition, only government network size

functioned as a partial mediator between comprehensive social competency and employee

growth (Hypothesis 4). Thus, overall, the hypotheses were confirmed only to some extent.

Possibly, Beijing may not be the optimal environment to study our hypotheses

because Beijing constitutes the most modern part of the Chinese society. Both cross-

cultural psychology and institutional theory suggest that there are differences between the

more highly developed capital city and rural China. There are also obvious differences

between urban China and rural China in terms of per capita GDP, infrastructure, education,

and health care, etc. (Fairbank and Goldman 1999; Yao 2002; NBSC 2003; Ravallion and

Chen 2004; Han 2005). Therefore, to take theses differences into consideration, we did a

second study in the more rural area of Xunyi.

Cross-cultural psychology suggests that with economic development, societies

become more individualistic (Ralston, Pounder et al. 2006) and that there is an urban-rural

divide with the urban areas being more individualistic than the rural areas in every society

(Hofstede 1980). Since networks are more important for collectivistic subcultures, this

suggests that social network may be less important in the urban center of Beijing than in

the rural area of Xunyi.

Institutional theory argues that institutional development starts in the metropolitan, urban areas and is delayed in the rural areas of a country. Institutional theory argues that *guanxi* may be more important in those situations in which the institutions are not well developed (Xin and Pearce 1996). North (1990; 2005) differentiates two kinds of institutions: formal and informal institutions. Formal institutions, such as law, provide the legal framework, rules, and regulations of behavior. Informal institutions, such as tradition, convention, and codes of conduct, guide individuals and society to function in a desired manner through the promotion of social norms and values. The content and quality of formal and informal institutions and their respective enforcement mechanisms ensure the proper functioning of society and are the necessary prerequisites for economic growth. From such a view, *guanxi,* is highly needed and utilized to make up for the deficiencies of formal institutional and failures in the legal system (Xin and Pearce 1996). Thus, in circumstances of weak formal institutions, personal connections and networking become fundamental parts of economic and social exchanges.

Thus, the urban area of Beijing should show less influence of government network than the rural area of Xunyi. In contrast to the more anonymous urban center, local government in a rural area controls much more of the resources and business opportunities than business owners. This leads to a stronger governmental influence on the survival and the success of small businesses. Therefore, networks (*guanxi)* with local government may be more influential in achieving high business growth in the less developed, rural area of China than in a big city. Sociologists found that the social network structure in rural China is quite different from the one in urban China (Fei 1948). Rural China is a relatively closed community. Therefore, social networks are very important.

Another reason to perform a second study was to overcome a limitation in the dependent variable used in Study 1. While business growth in the past 3 years was a useful variable – it was relatively crude and included some high degree of subjectivity. Therefore, in our second study we chose to use two more elaborate measured business growths–asset growth since start-up and business growth in the past 3 years based on detailed data of sales and profit.

Study 2: Small business owners in a rural area (Xunyi)

Methods

Sample

We employed the same sampling procedure as in Study 1 in a small, less developed rural region named Xunyi County, which is located in Shaanxi Province, in northwest China (200 km from Xi'an and 1,500 km from Beijing). This region had nearly 260,000 residents with a 250 US dollar average income per capita per year (Xunyi 2003), which was considerably lower than the 1,000 US dollar average income per capita per year in China and the 1,900 US dollar average income per capita per year in the urban city of Beijing (NBSC 2003). Since most businesses in this rural region employ less than 8 employees, in the Chinese law they are called '*Ge-ti-hu*' (literally, individual entrepreneur).

Three streets were randomly selected and those owners who had been in business for over three years were asked for an interview. Because most of the business owners were individual entrepreneurs, we did not employ the criterion of a minimum of one employee as in Study 1. In all, 78 small business owners were interviewed. The demographic and economic data of the Xunyi participants are presented in the third column of Table 2. Only 9% of the business owners in our sample have one or one more employees.

Measurement

Comprehensive social competency and network size: We employed the same measures of comprehensive social competency and the two variables of social network size as in Study 1. In terms of reliability, Cronbach's alphas were .78 for social skills, .85 for proactive and elaborate social strategies, and .91 for relational perseverance. To test whether the aggregation of the psychological variables to form a measure comprehensive social competency was justified, we conducted the same analyses as in Study 1. Again, the fit of the correlated three factors model was good ($\chi^2 = 22.34$, df = 15, $p < .10$; RMSEA = .08; TLI = .95; CFI = .97). Therefore, we aggregated the three psychological variables to form a single score of comprehensive social competency.

Asset growth since start-up: In Study 2 we employed a detailed measure of owners' personal *asset growth* based on the following data: 1) the total amount of starting capital; 2) the proportion of the starting capital that was borrowed from others (e.g., bank, family members, friends, etc.); 3) the proportion of the money borrowed from others at the time of the study; 4) the proportion of money lent to others (e.g., to customers, to other business owners, etc.) at the time of the study; 5) the proportion of money taken out of the business since start-up (e.g., personal savings, major life expense, buying a house, etc.); 6) the amount the owner would receive if he would sell the business at the time of the study (including goods, furniture, and so on). Based on these data we calculated the following indices: assets at start-up time which was equal to (1) - (2); assets at the time of the study which was equal to (4) + (5) +(6)–(3); and asset growth since start-up which was equal to assets at study time minus assets at start-up. Literature suggests that asset growth is a highly suitable variable when individuals are the focus of the entrepreneurship study

(Davidsson and Wiklund 2000).

Business growth in the past 3 years: In Xunyi we also collected the absolute sales

and profit data in 2000, 2001, 2002, and 2003 by day or by month and then calculated the

sales growth and profit growth in the past 3 years. In order to compare this with the Beijing

sample, we converted them into the same 7-point scale used in Beijing and averaged sales

growth and profit growth to get an index for business growth in the past 3 years.

Control variables

We employed the same control variables as in Study 1 with the exception of a

dummy variable for high-tech enterprises (none in this sample), and because there were

only 3 manufacturing businesses we eliminated this variable and used only one dummy

variable to code the business sector (service = 0; trade = 1).

Analytic approach

We employed the same analytic approach as in Study 1 (logarithm transformation,

multicollinearity test, and hierarchical regression analyses to test mediation effects, etc.).

INSERT TABLES 5 AND 6 ABOUT HERE

Results

The intercorrelations, means, and standard deviations are presented in Table 5.

Among the control variables, males worked more years as business owners (age of

business) ($r = .28, p < .05$) and had a larger network/family-friends ($r = .29, p < .05$).

Educated people were less likely to work in trade ($r = -.35, p < .05$). Business owners with

longer previous working experience had a larger network/family-friends ($r = .26, p < .05$).

The results of the hierarchical regression analyses are presented in Table 6. Similar to Study 1, there were several significant relationships between the control variables and the other variables. Education was related to business network size and government network size (β = .29, p < .05; β = .30, p < .05, respectively). Age of business (or number of years as a business owner) was related to both business and government network size (β = .29, p< .05; β = .31, p< .01, respectively). In addition, age of business (or number of years as a business owner) was related to asset growth since start-up (β = .57, p < .01). Finally, starting capital was related to business network size (β = .29, p < .01) and to asset growth since start-up (β = .43, p < .01) as well.

Hypothesis 1 postulates that comprehensive social competency is positively related to network size. Comprehensive social competency was once again significantly related to network size (for business network size β = .36, p < .01; for government network size β = .47, p < .01). Thus, Hypothesis 1 was confirmed.

Hypothesis 2 argues that comprehensive social competency is positively related to business growth. In both cases, comprehensive social competency was significantly related to business growth (for business growth in the past 3 years β = .36, p < .05; for asset growth since start-up β = .50, p < .01). Thus, Hypotheses 2 was also confirmed.

Hypothesis 3 states that network size is related to business growth. Table 6 (Models 5 and 6) show that business network size was unrelated to both growth variables (β = -.04 for business growth in the past 3 years and β = .01 for asset growth since start-up, both n.s.). There was no relationship of business network size to the growth variables. Government network size in Xunyi was significantly related to asset growth since start-up (β = .40, p < .01), but not to business growth in the past 3 years (β = -.09, n.s.). Thus, as in Study 1, Hypothesis 3 was supported only for government network size as an explanatory

variable and absolute growth measure (asset growth since start-up) as a dependent variable.

Mediator effect

We tested the mediation model only for government network size. Model 7 in Table 6 informs us that government network size was a partial mediator for asset growth since start-up as dependent variable. Controlling for the mediator reduced the regression coefficient of comprehensive social competency predicting asset growth since start-up from .50 to .43. Increments in R^2 (explained variance) were reduced from .17 to .11 (which was a decrease of 41%). Since all regression coefficients remained significant after controlling for the mediator, there was partial mediation; thus, Hypothesis 4 is supported only for government network size as the mediator and asset growth since start-up as the dependent variable.

Overall Discussion

The main objective of these two studies was to explore how business owners' comprehensive social competency, which is made up of social skills, proactive and elaborate social strategies, and relational perseverance, was related to social network size and business growth. Interestingly, both studies presented similar patterns in spite of the urban and rural difference.

The aggregated measure comprehensive social competency showed consistent and strong relationships to government network size and business growth. Thus, generally speaking, these two studies largely confirmed that comprehensive social competency is positively related to business growth directly and via government network size.

Interestingly, business network size was not a good predictor of business growth (and

therefore, business network size was also not a mediator in either of the studies). This lack

of relationship of business network size to business growth is consistent with other studies

(e.g., Peng and Luo (2000) found that managers' ties to other managers were only related to

market share, but not to return on asset). This may be due to business networks being

largely based on market-based transactions. Everyone, who can provide high quality goods

and service with a competitive price, has the potential to build up broader social networks

with other business agents in the market (e.g., customers, suppliers, and so on) – maybe

competency driven networks with other business owners may be less important in such a

case. Similarly, networks built on family and friends are not important for success; we were

not per se interested in this variable and, therefore, we included it only as a control variable

– but network/family-friends did not have an influence independently of the other concepts

in our model.

In contrast to business network size, government network size was a predictor for

success variables in both studies. However, the relationships of government networks with

business growth were larger and more consistent in Study 2. Moreover, comprehensive

social competency was correlated with government networks in both studies but more

highly in Study 2. Government network size was a partial mediator in both studies, but

again more strongly so in the less developed rural area of Study 2. Three potential,

interrelated reasons may explain these findings: First, institutionalization is less developed

in the rural area and the government officials may be both more approachable and have less

formal standards in a small town (such as Xunyi) than in the large, anonymous city (as in

Beijing). Second, a variant of this would be that the power differential between

government's and owners' resources may be higher in rural Xunyi. Therefore, *guanxi* to

government officials is important in determining business growth in the small town and

guanxi functions as a partial mediator. Third, the culture of collectivism may be higher in

the rural area than in the big city – it is a well-known phenomenon in cross-cultural

research that smaller countryside towns are more collectivistic than the big cities (Hofstede

1980), particularly in fast developing countries. Thus, there would be higher expectations

that *guanxi* is necessary in the rural area than in the big city. Unfortunately, our data do not

allow us to tease apart and to empirically differentiate the veridicality of these three

interpretations. We urge researchers to empirically test the cross-cultural interpretation

versus the institutional formal rules interpretation in the future.

The perceived business environment was probably not responsible for the differences

between Studies 1 and 2. We found no significant difference in the difficulty level of the

perceived business environment between Beijing owners and Xunyi owners (the mean

difference was .04, n.s.). Moreover, environmental difficulty did not play a large role for

success–it was not consistently correlated with success (we controlled for this variable in

the regression analyses).

Strengths, Limitations, and Conclusions

One methodological issue that makes it difficult to compare the results of the two

studies lies in the somewhat different operationalization of the success variables. We prefer

asset growth in Study 2 because it was a better measure than the somewhat cruder measures

used in Study 1. This was one of the reasons why we designed this study as a partial

replication of Study 1. However, we doubt that we would have received adequate responses

in Beijing. In the somewhat less trusting environment of the big city, there is more distrust

of an interviewer and, therefore, we would not have received the details that we asked to

calculate asset growth. One possible interpretation of the higher relationships in Study 2 is

that smaller organizations profit more from government contacts than the larger

organizations of Study 1. This result should not be over-interpreted, however, because

government network size is still dependent upon the proactive and elaborate social

 strategies included in the variable comprehensive social competency – all three active

social variables are significantly related to government network size, business network size,

and to both business growth variables in both studies.

 This is a cross-sectional study which puts restrictions on causal interpretations;

therefore, longitudinal studies should be done in this area. However, it is unlikely that

comprehensive social competency is substantially affected by business growth; therefore, it

is likely that the causal ordering is similar to the way suggested by our model.

This study only explored one part of the psychological predictors of network activities.

Other potential variables may be, for example, network cognition (Krackhardt 1992),

personality variables like extroversion, agreeableness, locus of internal control, and need

 for power (Morrison 2002), etc. In addition, social networks in the two studies have many

different structural properties, such as strength, density, structural holes, etc. Given the

complexity of getting good network data within the constraints of any one study, we

focused on network size. It is our proposition that comprehensive social competency is

related to the development of a certain degree of trust and that network size can only have

functional value if there is a certain degree of trust involved. Future studies should

explicitly test this by combining issues of network quality and network size and test

whether quality characteristics such as trust produce additional explained variance.

The two studies have their strengths. The most important strength is the fact that two

studies allow the cross-validation of the results. This strengthens the conclusions that were

drawn. The two studies showed clear relationships between comprehensive social

competency and both business and government network size and between comprehensive

social competency and all the different business growth variables. Thus, we can be sure that

these relationships hold within the Chinese context. In addition, it was useful to study both

the metropolis Beijing and the rural area of Xunyi. Some differences were found between

urban and rural China. Our model was somewhat more substantiated in the rural area than

in the urban area. We encourage researchers to take this factor into consideration by not

only sampling in highly developed urban centers but also in less developed rural regions.

Another strength of the research presented in this article is the measurement of

comprehensive social competence with two different methods – a questionnaire method

and a performance measure within the interview. Questionnaire measures alone may be

biased by attributions and memory of the respondents. A measure such as relational

perseverance cannot be biased because it measures performance directly by asking

participants to come up with as many ideas as they can to deal with difficult social

situations. These were then coded by the raters (with satisfactory inter-rater agreement).

Relational perseverance was significantly related to both the network size as well as to the

business growth variables in both studies; thus, a strong measure that captures one part of

the dynamics of relationship development could be shown to be predictive in the context of

China. Moreover, relational perseverance is related to the questionnaire measures of social

skills and proactive and elaborate social strategies which supports the validity of these

questionnaire measures.

One of the contributions of this article is its look at the psychological antecedents of

networks development. Our data suggest that comprehensive social competency is

consistently related to network size and to success. Thus, our major contribution is the

examination of the psychological antecedents of *guanxi* (or network) development. Since

business owners can influence their networks size, this has immediate practical implications and leads to a dynamic concept of networking (Baron and Markman 2000; Johannisson 2000; Hoang and Antoncic 2003). It may be useful to train people to increase their *guanxi* networks which might increase business growth. In addition, our studies showed that the literature on proactive approaches in work and organizational psychology and entrepreneurship should include proactive approaches not only toward the tasks at hand, but also toward social networks (Crant 1995; Dess, Lumpkin et al. 1997; Frese and Fay 2001; Sarasvathy 2001).

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Figure 1: The Theoretical Model of This Study
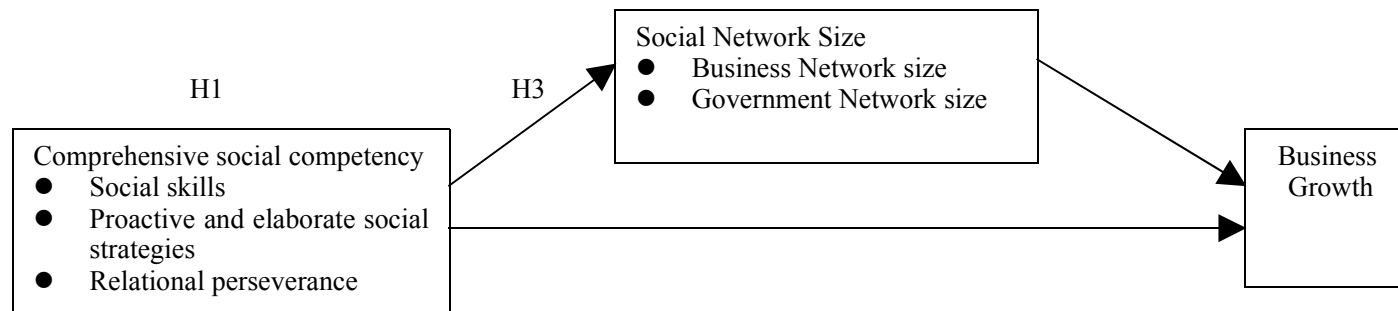
Table 1: The Classification of *guanxi* (With special reference to Zhang and Zhang 2006)

Guanxi's categories	*Guanxi*'s scope	*Guanxi*'s key characteristic
Hwang (1987)		
(1) Expressive tie	(1) Family members and relatives	(1) Permanent and stable relationships based on obligation
(2) Instrumental tie	**(2) Purely strangers**	**(2) Unstable and temporary relationships**
(3) Mixed tie	(3) Between the above both	(3) Between the above both
Yang (1994)		
(1) Jia-ren *guanxi*	(1) Family members	(1) Obeying with the obligation rule
(2) Qinqi *guanxi*	(2) Relatives	(2) Emphasizing more obligation than reciprocity
(3) Pengyou *guanxi*	(3) Friends, neighbors, colleagues, classmates, etc	(3) Emphasizing more reciprocity than obligation
(4) Shen-ren *guanxi*	**(4) Mere acquaintances or strangers**	**(4) Obeying with the instrumentality rules**
Fan (2002)		
(1) Family *guanxi*	(1) Family members and relatives	(1) Emotional and Instrumental
(2) Helper *guanxi*	(2) Friends, classmates	(2) Instrumental or utilitarian
(3) Business *guanxi*	**(3) Business agents in the market and government officials**	**(3) Purely utilitarian**
Chen and Chen (2004)		
(1) Family *guanxi*	(1) Family members, relatives	
(2) Familiar *guanxi*	(2) Former classmates, colleagues, etc	
(3) Stranger *guanxi*	**(3) With or without common demographic attributes**	
Zhang and Zhang (2006)		
(1) Obligatory type	(1) Family members, relatives	(1) Psychological identification, responsibility and obligation, blood and marriage
(2) Reciprocal type	(2) Fellow countrymen, classmates or alumni, and colleagues	(2) Favorable exchange, reciprocity, common background or experience
(3) Utilitarian type	**(3) Mere acquaintances**	**(3) Rent exchanges, Unitarianism; common background, an intermediary**

Table 2: The Demographic and Economic Variables in Study 1 and Study 2

	Study 1 (Beijing) (*N* = 133)	Study 2 (Xunyi) (*N* = 78)
Gender (male = 1, female = 0)	74% (male)	52.6% (male)
Age of business owners: Mean (SD)	33.71 (8.92)	34.13 (5.98)
Years of previous working experience: Mean (SD)	6.84 (8.62)	3.99 (5.83)
Age of business (or years as business owners): Mean (SD)	5.34 (3.69)	6.98 (3.73)
Education		
Elementary school (5 years)	2.3%	5.1%
Junior middle school (8 years)	21.1%	50.0%
Senior middle school (11 years)	29.3%	29.5%
College level (14-15 years)	39.1%	15.3%
Master degree or above (> 18 years)	8.3%	0
Business sectors		
Manufacturing (factory, repair shop, construction, etc)	9.8%	2.5%
Trade (retail and wholesale)	46.6%	80.8% (only retail shops)
Services	34.6%	16.7%
High-tech or mixed types	9.0%	0
Number of employees in 2003: Mean (SD)	15.10 (36.31)	2.05 (2.90)
Starting capital: Mean (SD) (1000 RMB≈120$)	27,600 (36,800)	3,100 (6,100)

Table 3: Intercorrelations of Variables plus Means and Standard Deviations in Study 1 (Beijing)

	M	SD	1	2	3	4	5	6	7	8	9	10
1. Gender (male = 1; female = 0)	.74	.44	--									
2. Education	3.29	.97	.09	--								
3. Age of business (years as owner)	5.28	3.69	.14	-.28**	--							
4. Years of previous work	6.85	8.69	.05	.05	-.07	--						
5. Manufacturing: dummy variable 1	.10	.30	.08	-.10	.40**	-.08	--					
6. Trade: dummy variable 2	.47	.50	-.18*	-.01	-.21*	-.07	-.31**	--				
7. Service: dummy variable 3	.30	.46	.04	-.13	.10	.09	-.22*	-.61**	--			
8. Starting capital	27.34	37.02	.23**	.24**	.15	.10	.20*	-.23**	-.14	--		
9. Environmental difficulty	2.95	.51	.16	.09	-.13	-.01	-.09	-.03	-.07	-.14	--	
10. Ln.Network/family-friends	1.16	.41	.03	.21*	.09	-.10	.06	-.08	-.05	.16	-.12	--
11. Social skills	3.60	.74	.19*	.19*	.07	.22*	.01	-.22*	.19*	.18*	-.16	.20*
12. Proactive and elaborate social strategies	3.14	.90	.20*	.17*	.14	.06	.07	-.30**	.17	.19*	-.08	.32**
13. Relational perseverance	4.60	1.56	-.03	.22*	-.11	-.08	-.01	-.17	.06	.17*	-.14	.08
14. Comprehensive social competency	3.78	.80	.11	.26**	.01	.04	.02	-.28**	.15	.24**	-.17	.24**
15. Ln.Business network size	1.97	.44	.07	.14	-.07	-.10	-.14	.10	-.15	.14	-.11	.22*
16. Ln.Government network size	1.06	.66	.05	.24**	.17	.07	.20*	-.12	-.15	.25**	-.19*	.50**
17. Ln.employee growth	2.07	.97	.18*	.22*	.10	-.03	-.03	-.24**	.12	.38**	-.03	.24**
18. Business growth in the past 3 years	4.93	1.11	.00	.39**	-.26**	-.12	-.14	-.04	-.04	.16	-.09	.22*

Table 3: (Continued)

	M	SD	11	12	13	14	15	16	17
11. Social skills	3.60	.74	--						
12. Proactive and elaborate social strategies	3.14	.90	.64**	--					
13. Relational perseverance	4.60	1.56	.16	.24**	--				
14. Comprehensive social competency	3.78	.80	.65**	.74**	.80**	--			
15. Ln.Business network size	1.97	.44	.23**	.23**	.25**	.31**	--		
16. Ln.Government network size	1.06	.66	.31**	.41**	.23**	.40**	.36**	--	
17. Ln. Employee growth	2.07	.97	.31**	.36**	.24**	.39**	.24**	.29**	--
18. Business growth in the past 3 years	4.93	1.11	.26**	.32**	.32**	.40**	.24**	.16	.43**

Note: *N* = 133; * significant at .05 level, ** significant at .01 level (2-tailed); the network data reported in 10,15 - 17 are transformed logarithmically

Table 4: The Results of Hierarchical Regression Analyses (Study 1, Beijing) (standardized regression coefficients are presented)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
	Ln.Business network size	Ln.Government network size	Business growth in the past 3 years	Ln.Employee growth	Business growth in the past 3 years	Ln.Employee growth	Ln.Employee growth
Gender	.08	-.01	.00	. 08	.00	. 08	. 08
Education	.05	.24**	.27**	.12	.27**	.12	.12
Age of business (years as owner)	-.01	.19*	-.22*	.07	-.22*	.07	.07
Years of previous working experience	-.13	.07	-.17*	-.08	-.17*	-.08	-.08
Manufacturing	-.28*	-.04	-.15	-.18	-.15	-.18	-.18
Trade	-.12	-.27*	-.15	-.18	-.15	-.18	-.18
Service	-.26†	-.32*	-.07	.03	-.07	.03	.03
Starting capital	.14	.09	.14	.32**	.14	.32**	.32**
Environmental difficulty	-.20*	-.23**	-.18*	-.08	-.18*	-.08	-.08
Ln.Network/family-friends	--	--	.11	.13	.11	.13	.13
R^2	.14	.23	.27	.25	.27	.25	.25
Adjust R^2	.07	.17	.21	.19	.21	.19	.19
F	2.14	4.03	4.60	4.14	4.60	4.14	4.14
Ln.Business network size	--	--	--	--	.12	.10	--
Ln.Government network size	--	--	--	--	-.01	.17†	.19*
R^2					.29	.31	.31
Adjust R^2					.21	.22	.22
△R^2					.01	.03†	.03*
F					3.99	4.21	4.38
Comprehensive social competency	.32**	.32**	.30**	.24**	--	--	.21*
R^2	.21	.31	.34	.30	--	--	.30
Adjust R^2	.15	.25	.28	.23	--	--	.23
△R^2	.08**	.08**	.07**	.04**			.03*
F	3.27	5.43	5.70.	4.62			4.55

Note: $N = 133$; ** significant at .01 level. *significant at .05 level. † significant at .10 level (2-tailed).

Table 5: Intercorrelations Variables plus Means and Standard Deviations in Study 2 (Xunyi)

	Mean	SD	1	2	3	4	5	6	7	8
1. Gender (male=1; female=0)	.52	.50	--							
2. Education	2.58	.91	.13	--						
3. Age of business (years as owner)	6.94	3.74	.28*	-.13	--					
4. Years of previous working experience	3.88	5.77	-.06	.10	-.01	--				
5. Business sector: dummy variable	.85	.36	-.09	-.35**	-.01	.01	--			
6. Starting capital	3.12	6.16	-.11	.03	-.15	.19	-.22	--		
7. Environmental difficulty	2.97	.52	-.03	.02	-.12	-.09	-.20	.03	--	
8. Ln.Network/family-friends	1.22	.45	.29*	.14	.20	.26*	-.14	.18	.02	--
9. Social skills	3.10	.77	.06	.17	.22	.34**	-.09	.21	-.04	.53**
10. Proactive and elaborate social strategies	2.70	.98	.16	.00	.15	.15	-.13	.15	.09	.46**
11. Relational perseverance	3.99	1.11	.04	.24*	.24*	.33**	-.18	.04	-.08	.28**
12. Comprehensive social competency	3.26	.77	.11	.17	.25*	.34**	-.18	.15	-.01	.51**
13. Ln.Business network size	2.21	.49	.21	.27*	.31**	.18	-.22	.25*	-.16	.54**
14. Ln.Government network size	1.47	.73	.11	.24*	.33**	.12	-.17	.06	-.08	.56**
15. Ln.Asset growth since start-up	2.04	1.41	.06	.03	.53**	.21	-.10	.35**	-.07	.28*
16. Business growth in the past 3 years	3.99	1.34	.01	.14	.12	-.04	-.18	-.02	-.15	.12

Table 5: (Continued)

	Mean	SD	9	10	11	12	13	14	15
9. Social skills	3.10	.77	--						
10. Proactive and elaborate social strategies	2.70	.98	.63**	--					
11. Relational perseverance	3.99	1.11	.45**	.38**	--				
12. Comprehensive social competency	3.26	.77	.82**	.82**	.79**	--			
13. Ln.Business network size	2.21	.49	.56**	.33**	.39**	.52**	--		
14. Ln.Government network size	1.47	.73	.45**	.41**	.50**	.57**	.62**	--	
15. Ln.Asset growth since start-up	2.04	1.41	.43**	.44**	.65**	.65**	.44**	.58**	--
16. Business growth in the past 3 years	3.99	1.34	.19	.26*	.25*	.29*	.14	.11	.24*

Note: *N* = 75 (3 manufacturing cases were excluded);

*Significant at .05 level, ** significant at .01 level (2-tailed); the network data reported in 8, 13-15 are transformed logarithmically

Table 6: The Results of Hierarchical Regression Analyses (Study 2. Xunyi) (standardized regression coefficients are presented)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
	Ln.Business network size	Ln.Government network size	Business growth in the past 3 years	Ln.Asset growth since start-up	Business growth in the past 3 years	Ln.Asset growth since start-up	Ln.Asset growth since start-up
Gender	.11	.00	-.12	-.03	-.12	-.03	-.03
Education	.29*	.30*	.15	.13	.15	.13	.13
Age of business (years as owner)	.29*	.31**	.02	.57**	.02	.57**	.57**
Years of previous working experience	.09	.07	-.12	.14	-.12	.14	.14
Business sectors	-.08	-.06	-.19	.06	-.19	.06	.06
Starting capital	.29**	.09	-.07	.43**	-.07	.43**	.43**
Environmental difficulty	-.16	-.07	-.22	-.05	-.22	-.05	-.05
Ln.Network/family-friends	--	--	.11	.05	.11	.05	.05
R^2	.32	.21	.12	.50	.12	.50	.50
Adjust R^2	.25	.12	-.01	.43	-.01	.43	.43
F	4.47	2.46	.95	7.77	.95	7.77	7.77
Ln.Business network size	--	--	--	--	-.04	.01	--
Ln.Government network size					-.09	.40**	.40**
R^2					.12	.59	.59
Adjusted R^2					-.04	.52	.53
$\triangle R^2$					.01	.09**	.09**
F					.78	8.70	9.82
Comprehensive social competency	.36**	.47**	.36*	.50**	--	--	.43**
R^2	.42	.38	.19	.66			.70
Adjusted R^2	.35	.31	.06	.61			.65
$\triangle R^2$	.10**	.17**	.07*	.17**			.11**
F	5.91	5.01	1.47	13.54			14.08

Note: $N = 75$ (3 manufacturing cases were excluded); **significant at .01 level; * significant at .05 level (2-tailed).

Appendix 1: Proactive and Elaborate Social Strategies Measures

1. I actively make friends with people working in government.

2. In many situations I initiate talks with strangers to expand my social circle.

3. I try my best to associate with successful people.

4. I actively improve my interpersonal skills

5. I spend a lot of time and money building up broad social networks for future use

6. In order to deal with others well, I intentionally collect information on their personal interests, hobbies, personalities and so on.

7. I make intelligent use of giving gifts to build up social ties.

8. Before I approach any important persons, I carefully pre-plan my words and what I want to do.

9. Whenever I encounter difficulties, I can find the right people to solve them.

10. I skillfully use intermediaries to introduce me to those people with whom I really want to associate.

(Note: 1-5 items measure proactive social strategies and 6-10 items measure elaborate social strategies)

Appendix 2: The Three Social Scenarios Used in Relational Perseverance Interview

1. 'Imagine that your key employee (e.g., the best salesperson or technician) wants to resign; if he or she leaves, your business will be greatly affected'.

2. 'Imagine that your goods or services have serious quality problems, some dissatisfied customers will spread bad news in the mass media or sue you in court'.

3. 'Imagine that you approved a large credit for a customer and now you can't get the money back'.