RESEARCH ARTICLE

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Do Entrepreneurial Social Networks Boost Enterprise Growth? Evidence from the Pearl River Delta in China

Abstract Against the backdrop of China's traditional culture and economic transition, the effect of entrepreneurs' social networks on enterprise growth has become an important topic attracting attention from both academics and practitioners. This paper decomposes entrepreneurs' social networks into three dimensions: the external horizontal social network representing inter-firm relationship, external vertical social network in the form of interactions between enterprises and the government, and internal vertical social network referring to entrepreneurs' control over enterprise operation. Results based on data from the Pearl River Delta reveal that all of the three dimensions of social network exert a positive impact on enterprise growth. The external horizontal social network plays the most influencing role, while the effects of the other two kinds of networks cannot be neglected either.

Keywords social networks, enterprise growth, private enterprises, dimensional structure

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1 Introduction

Among many influencing factors of enterprise growth, a key one is the role played by entrepreneurs through their social networks. Starr and MacMillan (1990) divided entrepreneurs into two types: One is social transaction oriented (STO) entrepreneurs who acquire resources at the least expenses through social networks, and the other is traditional administrative (TA) entrepreneurs who pay full bills for resources. Their findings show that the STO type of entrepreneurs who turn to social networks for help can get much more social resources on lower expenses than the TA type of entrepreneurs. Chinese researchers Shi, Hu and Fu (2007) also confirmed that entrepreneurs' social networks have positive effects on enterprise performance and growth.

The extant literature regarding enterprise growth has mainly studied entrepreneur social networks from two aspects: Western researchers mainly focus on inter-firm relationship, thus attaching a greater importance to the social network among entrepreneurs and people in other enterprises, while Chinese scholars focus more on the relationship between enterprises and governments, thus attaching a greater importance to the social network between enterprise and the government. There exist, however, few studies on entrepreneurs' internal social network. In her pioneering book of enterprise growth theory, Penrose (1959) argued that enterprises must implement an expansion strategy and extend the managerial team for development. If the managerial team cannot keep up with the expansion speed, entrepreneurs will lose control over their enterprises, resulting in an inability to compete with other enterprises and development stagnation. The purpose of this paper is to explore the effect of entrepreneurs' three social networks on enterprise growth.

2 Literature Review and Hypotheses

2.1 Entrepreneur Social Network and Its Three Dimensions

Generally speaking, only a well-developed market can facilitate cooperation among enterprises and economic growth. However, how could China maintain decades of rapid economic growth during its transition period? Peng and Luo (2000) proposed that the interpersonal network fostered by entrepreneurs has served as an important resource-exchange channel for enterprises to gain materials, information, and even spiritual support from each other to boost their development (Lin, 2001). Xin and Pearce (1996) argued that in the Chinese context, "*guanxi*" has become the blood for interpersonal links and business behaviors. *Guanxi* or social networks can be regarded as inimitable resources, as means to create resources and as channels to obtain resources and information.

Meanwhile, as social networks are characterized by inimitability and non-substitutability, resources or information obtained through these networks also have their uniqueness. We thus assume that an entrepreneur's social network is one of the core resources of his/her enterprise and an important source of enterprise competitiveness.

The role entrepreneurs play in their enterprises is unique. Entrepreneurs are the key nodes to link their enterprises with the outside environment. They must be sensitive observers of an uncertain environment so that to grasp potentials, opportunities and acquire resources. Besides, they must be able to effectively integrate both internal and external resources to endow enterprises with competitive advantages. Moreover, organizations need to acquire and apply information to reduce uncertainty, find opportunities and improve performance. Entrepreneurs can efficiently collect and manage information as well as allocate information through networks as they occupy the top position in their organizations and play the key role to link employees inside enterprises with important actors outside enterprises. Therefore, Collins and Clark (2003) pointed out that top managers gain access to information and make immediate and high-quality strategic decisions through building up internal and external social networks. Organization leaders' internal and external social networks are also considered as efficient means to quickly and effectively secure and mobilize resources (Oh, Chung and Labiance, 2004). Because of the unique positions as well as the important roles of entrepreneurs and their social networks for enterprises, many researchers used entrepreneurs' social networks as a substitute for enterprise social networks in their study (e.g., Peng and Luo, 2000; Shi et al., 2007).

There are two dimensions to divide various types of entrepreneur social networks. One is to divide the networks in accordance with the existence of superior-subordinate relationship: The network belongs to the vertical one when there is a superior-subordinate relationship (e.g., the relationship between leaders and employees or the relationship between government officials and entrepreneurs); it belongs to the horizontal network when the superior-subordinate relationship does not exist (e.g., the relationship among entrepreneurs). The other dimension is whether entrepreneurs and the members of their networks belong to the same organization: if they do, then this network belongs to an internal one, otherwise an external network. A 2 × 2 matrix can be obtained after we divide entrepreneur social networks by the above two dimensions, as shown in Fig. 1. However, because entrepreneurs occupy the topmost position in their enterprises and all the employees are led by them, there exist no internal horizontal social networks. Based on the above rationale, we summarize that there are three types of entrepreneur social networks, namely entrepreneurs' external horizontal social networks (EEHSN), representing

inter-firm relationships, entrepreneurs' external vertical social networks (EEVSN), indicating the interactions between enterprises and governments, and entrepreneurs' internal vertical social networks (EIVSN) referring to entrepreneurs' control over enterprise operations (see Fig. 1).

	External social networks	Internal social networks
Horizontal social networks	**EEHSN** Social networks between entrepreneurs and other economic entities, representing inter-firm relationships	
Vertical social networks	**EEVSN** Social networks between entrepreneurs and government officials, representing relationships between enterprises and governments	**EIVSN** Social networks between entrepreneurs and employees, representing entrepreneurs' control over the daily operations of their enterprises

Fig. 1   The Three Dimensions of Entrepreneurs' Social Networks
Note: There exists no entrepreneurs' internal horizontal social network because all the employees are subject to the leadership of entrepreneurs.

In the literatures of enterprise growth, Western researchers tend to pay more attention to EEHSN, namely, inter-firm relationship because in a mature market economy, all the information and resources can be accessed through market mechanism and enterprises can gain almost all the needed information and resources. However, as a transitional economy, market mechanisms in China are not mature and a majority of scarce resources are still under strict government control. Many Chinese enterprises are unable to gain access to needed resources through market mechanisms. They have to turn to informal social networks for help. In view of the special situations in China, many studies on Chinese social networks are more concerned with the relationship between enterprises and governments, namely the EEVSN dimension. Compared with the great importance attached to EEHSN and EEVSN in the extant literature, the EIVSN dimension seems to have gained much less academic attention. For example, Li and Hu (2000) asserted that after the enterprise scale grows to a certain degree, it is necessary for top managers "let go of" routine businesses and decision-making power to other managers, and at the same time arrange their own "eyes and ears" in several important departments to avoid losing control over their enterprises. Therefore, for private enterprises, EIVSN is of particular importance for enterprise growth. In recent years, the EIVSN dimension has gain an increasing amount of attention from researchers home and abroad (e.g., Collins and Clark, 2003; Chu, 2004). Hence, we propose that:

H1   Entrepreneurs' social networks are composed of three types: external

horizontal social networks, external vertical social networks, and internal vertical social networks.

2.2　The Three-Dimensioned Social Network of Entrepreneurs and Enterprise Growth

2.2.1　EEHSN and Enterprise Growth

The study on enterprise social networks can be traced back to Smith's (1776) division of labor and specialization theory. His successor Marshall, not only stressed internal collaboration but also emphasized enterprise external division of labor and linkages (Marshall, 1920). Leenders and Gabbay (1999) even argued that enterprise external social networks greatly contribute to the enterprise performance. Through the ties with other enterprises, entrepreneurs can gain access to many needed external resources and provide products and services in a competitive price thus attracting and retaining more customers. Inter-firm relationships help enterprises acquire complementary resources and develop competitive advantages, thereby promoting enterprises development (Glaister and Buckley, 1996). Another empirical study also confirmed that enterprise relationships with other organizations (e.g., venture companies, universities, research institutions and associations for pioneers) are beneficial to enterprise growth (Lee, Lee and Johannes, 2001).

In Chinese communities, the establishment, survival, or even trading activities of enterprises are closely related with their entrepreneurs' social networks. In addition, expansion and development of Chinese enterprises are also associated with entrepreneurs' social networks expansion because the latter can effectively reduce the distrust in trading, and thus save transaction cost (Redding, 1993). Moreover, many studies have also shown that leaders with more ties with outside members will occupy a greater number of resource channels (e.g., OH et al., 2004; Lin, 2001). It has been argued that enterprises with their leaders possessing more external horizontal social networks will be more efficient as these enterprises not only have more resource channels but also faster access to information, differentiated ideas, and key tools (Oh, Labiance and Chung, 2006). Enterprise leaders' relationship or "*guanxi*" with other leaders contribute to enterprise performance, as reported in an empirical study (Peng and Luo, 2000). Accordingly, we propose:

H2　The EEHSN with members of other enterprises is positively related to enterprise growth.

2.2.2　EEVSN and Enterprise Growth

As pointed out by Khanna and Palepu (1997), a distinct feature of transitional

economies is "institutional voids," under which entrepreneurs often need to establish social relationship with government officials to maintain the daily operation of their enterprises, such as to acquire market information, learn market regulations, or even file lawsuit against other enterprises. Therefore, Chinese entrepreneurs regard state systems as the most complex, unpredictable, and influencing factor of enterprise growth (Tan and Litschert, 1994). Given that, Peng and Luo (2000) believed that entrepreneurs' establishment of favorable social networks with government officials will enable their enterprises to successfully cope with many unknown hazards, thus making their enterprises perform better.

Although China has implemented market reform for decades, government officials from different levels still have considerable power in approving projects and allocating resources. As Peng and Heath (1996) noted, as the "*guanxi*" culture prevails in China, enterprises with entrepreneurs having friends or relatives working in government departments are more likely to perform better (Shi, 1998). Li and Zhang's (2007) empirical study also verified that the relationship between entrepreneurs and government officials are beneficial to business performance. Hence,

H3   The EEVSN with government officials is positively related to enterprise growth.

2.2.3   EIVSN and Enterprise Growth

Most of entrepreneurs in private enterprises play dual roles of both investors and operators. Without the separation of ownership and managerial rights, there is no principle-agent problem in these enterprises. However, enterprise growth means part of the original market transactions are internalized, resulting in a need for a relatively developed administrative coordination mechanism. Moreover, with the expansion of enterprises and refinement of division of labor, the relationships among all the stakeholders become more complicated. In order to prevent agents' behavior to deviate from principals' interests, principals need to adopt effective incentive and monitoring mechanisms. However, as the design, implementation and monitoring cost of these mechanisms are high and may not be able to achieve the desirable results, they are not popular among private entrepreneurs. Thus, the problem of enterprise growth is, by nature, how to effectively "integrate" the newly-hired managers into enterprises and cultivate a mutual-trust relationship between entrepreneurs and agents. Therefore, we can study the relationship between entrepreneurs and managers from the perspective of social networks and interpersonal relationship.

Chu (2004) found that the growth bottleneck for many private enterprises lies in human capital rather than financial capital. To break the bottleneck, it is necessary for entrepreneurs to establish and maintain good social networks with their employees. Xu, Sun, Wang and Qian (2008) argued that entrepreneurs' social networks with employees have positive effects on the implementation of enterprise strategies. Fu, Tsui and Dess (2006) also studied the problem from a combined perspective of resource-based, knowledge-based views and the social network theory. Their findings confirmed that entrepreneurs' social networks with employees have positive effects on enterprise growth. Hence,

H4   EIVSN with employees is positively related to enterprise growth.

3   Research Method

3.1   Sample

Non-state-owned enterprises infuse new blood for China's maturing market economy. However, because they do not receive the same support from government as their state-owned peers, they need to attach greater importance on the construction of social networks with their suppliers, distributors, and customers (Shi et al., 2007). Xin and Pearce (1996) make comparisons among state-owned, collectively-owned, and private enterprises, and found that entrepreneurs in private enterprises are more likely to trust and depend on social networks, and thus more willing to establish and maintain social networks, especially to establish good relationship with government officials. Therefore, as compared with other types of enterprises, private enterprises are more suitable for studying entrepreneur social networks in the context of China. In this study, we choose the Pearl River Delta as the region to conduct our research. As one of the earliest "opened" regions in China, the delta is thriving with private enterprises and leads other Chinese regions in market development and globalization process. More importantly, entrepreneurs in the region as a whole pay more attention to the establishment and maintenance of social networks. Therefore, the region is suitable to conduct the research on social networks.

With the help from several alumni associations in the Pearl River Delta, EMBA students of Sun Yat-sen University, and the social networks of the researchers, a total of 978 questionnaires were distributed to entrepreneurs in the region. In total, 287 questionnaires were returned (return rate = 29.35%). After eliminating questionnaires with many missing values and enterprises founded less than one year ago (as we need longitudinal data to compute the indicator of firm growth), 206 valid questionnaires were obtained, as shown in Table 1 below.

Table 1 Descriptive Statistics of the Sample Enterprises

Entrepreneurs' attributes		Obs.	%	Firm attributes		Obs.	%
Age (year)	20−29	24	9.36	Firm age (year)	2−5	76	37.62
	30−39	108	47.78		6−9	55	27.23
	40−49	63	37.44		11−19	54	26.73
	⩾50	11	5.42		⩾20	17	8.42
Gender	Male	172	83.5	No. of employee	⩽100	33	16.26
	Female	34	16.5		101−999	124	61.08
Education	Senior high school or secondary school	44	21.57		⩾1 000	46	22.66
	Junior college	63	30.88	Industry	Manufacturing	89	43.67
	Undergraduate	71	34.8		Service	97	47.55
	Postgraduate	26	12.75		Others	18	8.82

Note: Participants were private entrepreneurs. As some data is missing, the total percentage in some categories in the table might not be 100%.

3.2   Measures

Entrepreneurs' external horizontal social networks (EEHSN). We adopted Collins and Clark's (2003) method to measure EEHSN from three aspects: size, range and quality. EEHSN was divided into four categories: suppliers, customers, competitors, and alliance partners. Participants were asked to report the number of the networks they have in each category, and assess the average intimacy level on each category of the network on a five-point scale ranging from "not intimate at all" to "extremely intimate." According to Collins and Clark (2003), network size reflects the total number of networks held by entrepreneurs. Hence we summed up the number of networks on each category held by entrepreneurs to reflect the EEHSN size. As network range implies the network diversity held by entrepreneurs, we calculated EEHSN range by the number of network categories entrepreneurs can access. Network quality was measured through entrepreneurs' average level of intimacy with their networks.

Entrepreneurs' external vertical social networks (EEVSN). We divided entrepreneurs' external vertical networks into four categories: governments, industrial administrative institutions, market regulatory institutions (such as taxation bureaus and commerce and industry bureaus at various levels), and state-owned financial institutions. Entrepreneurs were asked to report the number of networks they have in each category, and assess the average intimacy level in each category of the network on a five-point scale. We then calculated the size, range, and quality of EEVSN using the same approach as applied in calculating the size, range and quality of EEHSN.

Entrepreneurs' internal vertical social networks (EIVSN). Likewise, we also divided EIVSN into four categories: sales and marketing, research and development, production and operations, and "other internal vertical social networks." Participants were asked to report the number of networks they have in each category, and assess the average intimacy level in each category of the network on a five-point scale.

Enterprise growth. Enterprise growth is always accompanied by increase in sales revenue, profitability, and organizational expansion (Chu, 2004). Therefore, we chose the average growth rate of sales revenue, net profit, and number of employees as indicators of enterprise growth. Specifically, we asked the participants to report their enterprise sales revenue, net profit and number of employees for the past three years. We then calculated the average growth rate of the three indicators in the past two years for sample enterprises. Questionnaires with only one-year data on the growth rates of sales revenue, net profit, and number of employee were eliminated.

4 Results

4.1 Measurement Model and Reliability and Validity Test

Confirmatory factor analysis (CFA) was adopted to test the measurement model of this study. The results of CFA show that GFI = 0.93, RMR = 0.06, and RMSEA = 0.072, indicating a satisfactory degree of absolute fit of the model. In addition, CFI = 0.97, IFI = 0.97, NFI = 0.95, NNFI = 0.96, and RFI = 0.93, which indicate that the degree of relative fit of the measurement model is also fine. Furthermore, PNFI = 0.69, PGFI = 0.57, and χ^2/df = 2.099, which indicate the model is parsimonious. Taken together, our measurement model has a satisfactory goodness-of-fit.

The reliability coefficient α, composite reliability (C.R.) for all the measured variables are shown in Table 2. The α reliability of EEHSN, EEVSN, EIVSN, and enterprise growth are 0.86, 0.86, 0.81 and 0.81 respectively, all of which are larger than 0.7. The composite reliability of EEHSN, EEVSN, EIVSN, and enterprise growth are 0.82, 0.81, 0.77, and 0.80 respectively, all of which are larger than 0.7 (Hair, Anderson, Tatham and Blake, 1998). In sum, the results of α and composite reliability tests both confirm that the scales used in this study are reliable.

We tested convergent validity and discriminate validity through AVE and correlation coefficients for all measured variables. Table 2 shows that the AVE for each variable ranges from 0.53 to 0.61, which exceeds 0.5 and indicates that this study has good convergent validity (Fornell and Larcker, 1981). As illustrated in Table 2, the correlation coefficients for all the variables range from

0.53 to 0.68, with the largest value of 0.68. Thus, the largest square value of correlation coefficients is 0.4624 (0.68×0.68), which is less than the least AVE value of 0.53. Therefore, all the AVE values for factors are larger than the square of the correlation coefficients, indicating that this measurement model has a satisfactory discriminate validity (Fornell and Larcker, 1981; Shook, Ketchen, Hult and Kacmar, 2004).

Table 2   Mean, Standard Deviation (S.D.), Reliability Coefficient, AVE, and Correlation Coefficient for Variables ($N = 206$)

Variable	Mean	S.D.	α	C.R.	AVE	1	2	3	4
1. EEHSN	3.68	0.81	0.86	0.82	0.61	1.00			
2. EEVSN	3.87	0.89	0.86	0.81	0.59	0.68[***]	1.00		
3. EIVSN	3.75	0.85	0.81	0.77	0.53	0.53[***]	0.45[***]	1.00	
4. Enterprise growth	3.72	0.83	0.81	0.80	0.58	0.60[***]	0.54[***]	0.45[***]	1.00

Note: α = α reliability, C.R. = composite reliability; AVE = average variance extracted; *** indicates significant at the level of 0.01.

4.2   Test of the Three Types of Entrepreneur Social Networks

As above, this study proposes a three-dimensional structure of entrepreneur social networks. In fact, the three dimensions are significantly correlated with one another (Table 2), which implies the possible existence of a higher-order factor, namely entrepreneur social networks. To further confirm that EEHSN, EEVSN, and EIVSN belong to the factor of entrepreneur social network, we conducted a goodness-of-fit test on the higher-order factor model. The results exhibit that GFI = 0.95, RMR = 0.034, and RMSEA = 0.075, which indicate good absolute fit; the CFI = 0.97, IFI = 0.97, NFI = 0.95, NNFI = 0.96, and RFI = 0.93, which mean good relative fit; the PNFI = 0.63, PGFI = 0.51, and χ^2/df = 2.156, which reveal good parsimony of higher-order factor model. A good fitness of the higher-order factor model confirms that entrepreneur social network comprises of the three dimensions of EEHSN, EEVSN, and EIVSN. Therefore, H1 is supported.

4.3   The Impact of Entrepreneurs' Three Dimensional Social Networks on Enterprise Growth

To test the impact of the three dimensions of entrepreneurs' social networks on enterprise growth, we constructed a model as shown in Fig. 2 and a goodness-of-fit test on the model with LISTREL 8.72. Testing results are as follows: GFI=0.93, RMR = 0.060 and RMSEA = 0.07, which indicate good absolute fit;

CFI = 0.97, IFI = 0.97, NFI = 0.95, NNFI = 0.96 and RFI = 0.93, which mean good relative fit; the PNFI = 0.69, PGFI = 0.57 and χ^2/df = 2.03, which indicate good parsimony of the model. All of the above fit indices present a good fit of the model and confirm the suitability of this model for hypothesis testing.
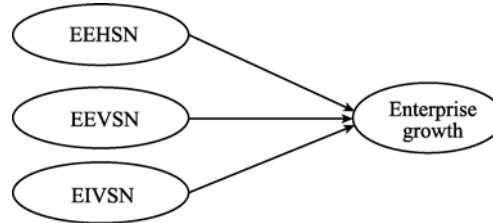

Fig. 2   Model Structure

All the estimations of the parameters and hypotheses by means of maximum likelihood estimation method are presented in Table 3. The results show that the external horizontal social network exerts a positive and significant impact on enterprise growth (γ = 0.38, P < 0.05), supporting H2. Similarly, the external vertical social network (γ = 0.17, P < 0.10) and internal vertical social networks (γ = 0.18, P < 0.05) also positively and significantly affect enterprise growth, supporting H3 and H4.

Table 3   Parameter Estimation and Test Results of the Hypotheses

Path	Path coefficient	T value	Corresponding hypothesis	Test result
EEHSN → Enterprise growth	0.38**	2.33	H2	Supported
EEVSN → Enterprise growth	0.17*	1.69	H3	Supported
EIVSN → Enterprise growth	0.18**	1.98	H4	Supported

Note: * indicates significant at the level of 0.10, ** indicates significant at the level of 0.05.

5   Discussion

Entrepreneur social networks have been regarded as strategic resources as they contain abundant information and business opportunities and play key roles in promoting enterprise growth. Our empirical evidence from the Pearl River Delta supports the above viewpoint. When studying how can Chinese enterprises continue to develop and thrive, Li and Yuan (2005) believed the key lies not in tangible assets but in intangible assets. In Chinese traditional culture, entrepreneurs' social networks are undoubtedly the most important intangible assets for enterprise growth. Moreover, the formation of social networks usually relates to a specific historic context, and with the attribute of path dependency,

which makes it hard for competitors to imitate or substitute. In addition, entrepreneur social networks are inheritable, making them lasting assets for Chinese enterprises.

This study divides entrepreneurs social networks into three dimensions (i.e., EEHSN, EEVSN, and EIVSN) based on whether there is a superior-subordinate relationship or whether the network is within the boundary of the same enterprise. These three dimensions depict entrepreneur social network from different aspects, and represent inter-firm relationship, relationship between enterprises and governments, and entrepreneurs' control over enterprise operations.

EEHSN represents inter-firm relationship. This study finds that benign EEHSN can significantly enhance enterprise growth, and have the largest impacting effects among the three dimensions. Traditionally, enterprises are regarded as the fundamental units of analysis, which means enterprises are isolated entities or the relationships between enterprises are cut apart. The modern opinion views enterprises as closely related to one another and argues that firm competition has already gone beyond the boundary of any individual enterprises. Rather, it happens among different business ecosystems (Li and Guo, 2008). Wang (2006) studied the case of China's machine tool industry, and suggested that with the deepening of division of labor, enterprises will benefit from their stable collaborative division of labor networks with other enterprises which may counteract the deficiency in individual enterprise's internal capabilities. Again, with the perfection of market mechanism, we believe that communications and interdependencies among enterprises will become the main channels for them to acquire resources, thus EEHSN functioning as these channels will exert an increasingly important effect on enterprise growth. To verify this assumption, this study investigated enterprises in the Pearl River Delta where market mechanism is mature and social networks among entrepreneurs play key roles in enterprise growth. Our findings confirmed the above assumption.

EEVSN refers to the relationship between enterprises and government departments. The results suggest that EEVSN can significantly enhance enterprise growth. Similar results can also be found in Shi et al.'s (2007) study. They argued that in China's transitional economy, the role played by government can still not be neglected. They even proposed that although market-oriented economy reform has been conducted in China for decades, our government still involves in almost every field of the economy, such as resource allocation, product pricing, firm supervision, industry supervision, etc., which compels entrepreneurs to establish networks with government to ensure access to needed resources. Thus, the relationship with government may be the most important channel for enterprises to growth. Clearly, EEVSN is of significance for enterprise growth. However, our findings suggest that with the acceleration and

perfection of market reform, and the weakening of governments' control over resources, the effect of EEVSN on enterprise growth will gradually decrease, and this effect will be substituted by inter-firm relationship which better reflects the market mechanism.

EIVSN reflects entrepreneurs' relationship with employees, and acts as entrepreneurs' control over the daily operations of their enterprises. Our results show that EIVSN can significantly enhance enterprise growth while the function of this dimension is always neglected by researchers. As asserted by Gao and Guan (2008), this kind of networks will impact entrepreneurs' control over enterprise operations. When trust crisis and interest conflict emerge between entrepreneurs and key employees, entrepreneurs' control rights over enterprises operations will decrease. Once the control rights fall below a certain level, control rights transfer may occur. This view has also been supported by Chu (2004), Li and Hu (2000), and other researchers, who believe EIVSN plays significant roles in enterprise growth, especially for private enterprises.

6   Conclusion

This study examines the impact of entrepreneurs' social networks on enterprise growth in the context of China's transition economy. The theoretical framework suggests that entrepreneur social network comprises of external horizontal social networks, external vertical social networks, and internal vertical social networks. We find that all of these three social networks have significant and positive impacts on enterprise growth. Among the three dimensions, the impact of external horizontal social networks on enterprise growth is the greatest, but the effects of the other two dimensions can not be neglected either.

This study has important implications for Chinese entrepreneurs and managers. First, entrepreneurs' social networks exert a positive impact on enterprise growth, which confirms that "*guanxi*" is an important informal mechanism to exchange resources in China's transition economy. Second, external horizontal social networks have the greatest impact on enterprise growth, suggesting that inter-firm relationship has taken the place of government departments in allocating resources and become the most important channels for enterprises to acquire resources. This conclusion implies that China's market reform has made prominent achievements and the market mechanism is functioning healthily. Third, the positive effect of entrepreneurs' external vertical social networks on enterprise growth indicates that government departments at various levels are still one of the key elements impacting enterprise growth in China, which reminds us of the urgency for further deepening the market reform. Lastly, although internal vertical social networks significantly affect enterprise growth, they have always been neglected in extant literature. Our findings show that

entrepreneurs' harmonious relationship with employees is of significance to enterprise growth.

This study has the follow limitations. First, it needs to measure entrepreneurs' social networks and relevant enterprise performance. However, these two aspects of data are both reported by entrepreneurs themselves. Therefore, a certain common method bias exists in our conclusions. Second, the data of this study comes solely from the Pearl River Delta, one of the most developed regions in China. As a result, caution is required before extending the conclusions to other less developed regions in China or other countries. Lastly, as we collected only cross-section data, the conclusions, by nature, are correlations among variables. Thus, more precise causality relationship still needs to be verified by longitudinal studies in the future.

Future research needs to explore (1) the mechanism of how entrepreneur social networks impact on enterprise growth, especially by combining the three dimensions proposed in this study; (2) how can entrepreneurs construct their social networks to enhance enterprise growth. Interesting findings have already been made in this aspect. For example, researchers have already found, from the perspective of social network analysis, that by occupying a central position in their social networks, entrepreneurs can gain access to more information and resources (Bell, 2005; Qian et al., 2010). The analysis of the impact of entrepreneurs' social networks on enterprise growth from the perspective of network structure itself might also be a direction for future research in the field.

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