Relationship Marketing in *Guanxi* networks: A Social Network Analysis Study of Chinese construction Small and Medium-sized Enterprises

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Abstract

Despite the significance of *Guanxi* networking as the integrated approach to relationship marketing in the Chinese business environment, there remains, however, a limited understanding of the structural and relational characteristics of these stakeholder networks, within which value is jointly created and shared. In this study, the value-adding ego-networks of the business owners in four Chinese construction small- and medium-sized enterprises (SMEs) are examined. The relationship between the business owner and six main stakeholder groups was identified, quantified, analyzed, and visualized using SNA. Relationships were measured according to the frequency of communication, the value of favour exchanges, and the amount of emotional investment in the relationship. Comparative SNA studies were conducted, focusing on ego-network density, tie strength, and prominence of key stakeholders. The findings highlighted the high degree of the structural and relational embeddedness in Chinese SMEs with *Guanxi* ties (both strong and weak) dominating the construction business-owners' network. They also underlined the prominence of the internal markets of multiskilled employees and business-development managers. Transactional ties, albeit a minority, also exist in the business-owners' network, which confirms that both relational and transactional marketing coexist in the Chinese construction industry. The study draws managerial implications for entrepreneurial business owners and managers, and proposes directions for future research.

Key words: *Guanxi*; Relationship marketing (RM); social-network theory, social-network analysis (SNA); small- and medium-sized enterprises (SMEs); Construction industry.

1. Introduction

Traditional transactional marketing, with its short-term perspective and emphasis on product features and single transactions, is becoming increasingly inharmonious with the highly competitive and multi-stakeholder environment of the 21st century (Christopher et al., 2002). This is particularly important for small and medium-sized enterprises (SMEs), which, as the competition becomes heated, are proactively pursuing strategies that entail adding a value beyond the embedded one in products and/or services to differentiate from those supplied by other rivals (Ndubisi and Matanda, 2011; Christopher et al., 2002). Firms are thus gradually shifting towards relationship marketing, which focuses on customer retention (repeat business) and 'value co-creation' (Prahalad and Ramaswamy, 2004). Although relationship marketing originated from a dualistic perspective between buyer-and-seller relationships in a business-to-business (B2B) environment, it became pervasive when it widened into networks of stakeholders (Gummesson, 2008; Grönroos, 2007). Freeman (1984: 46) gives one of the early definitions of stakeholders as "all of those groups and individuals that can affect, or are affected by, the accomplishment of organizational purpose". The view is that value co-creation transcends formal organizational boundaries and that a firm is perceived to be embedded in a network of relationships within which value is jointly created and shared in interactions with customers and other stakeholders (Christopher et al., 2002; Payne et al., 2005). The position that a firm occupies within the network determines what value *emerges* and for whom (Ballantyne et al., 2003; Gummesson and Mele, 2010). Indeed, contemporary market economies are experiencing a fundamental re-conceptualization of how the notion of value is defined and how it is created through the activities of firms and other organizations, with a business-network perspective increasingly replacing traditional markets and vertically integrated firms (Halinen and Törnroos, 2005). In fact, a growing number of researchers in marketing have called for a 'paradigm shift' with relationships and networks considered to be the cornerstones of marketing (Gummesson, 1999).

In a Western context, such relational approaches in business activities are still in their infancy (Pryke and Smyth, 2006; Smyth and Pryke, 2008) whereas such approaches have been deeply ingrained in Chinese culture since the Sixth Century BC (Luo, 1997; Yau et al., 2000). Within the context of the Confucian culture in China, marketing in small construction firms is more like *la Guanxi* (building personal relationships) with the client and other stakeholders, which harmonizes with the term 'relationship marketing' in the Western view. "It is widely recognized that *Guanxi* is a key business determinant of firm performance because the life blood of the macro economy and the micro business in the society is conducted through *Guanxi* networks" (Luo, 1997: 43). Su et al. (2007) add that *Guanxi* "is in essence a network of resource coalition-based stakeholders sharing resources for survival" (p. 301). *Guanxi* in this context is the ability to secure favours by developing and maintaining long-term personal relationships with other individuals and organizations (Luo, 1997; Yang and Wang, 2011).

Despite the importance of *Guanxi* as social-networking strategy for Chinese SMEs, knowledge of the effective management of *Guanxi* networks in the marketing literature remains weak (Yang and Wang, 2011) and the existing literature suffers from several limitations. First, few studies have endeavoured to understand the structural and relational characteristics of value-adding relationships in *Guanxi*. For example, while Peng and Luo (2000) underlined the importance of differentiating *Guanxi* networks into different categories, they limited their study to only business ties and political ties. Su et al. (2007) proposed a hierarchical stakeholder model which distinguishes between internal and external *Guanxi*—core, major, and peripheral *Guanxi*, and primary and secondary *Guanxi* stakeholders. Yet no effort has been made to empirically operationalize the model or to examine relationships across and between these key stakeholders. Secondly, while Su et al. (2007) have emphasized that the salience of *Guanxi* differs, no attempt has been made to identify the most important *Guanxi* value-adding ties to an entrepreneurial business. Also there is a paucity of research that attempts to distinguish the distinct characteristics of *Guanxi* networks during the different stages of a firm's life cycle. Specifically, the following questions are in need of further investigation:

- What are the distinctions between the western concept of relationship marketing and the Chinese *Guanxi*?
- What are the specific structural and relational characteristics of a Chinese SME business owner value-adding *Guanxi* network?
- With whom does the business owner choose to connect? Why? And how are these ties built and maintained?
- Which stakeholder groups are the most important to an SME Business owner during the different stages of the firm's life cycle?

In order to address these questions, this study draws on social network theory, and the associated social network analysis (SNA) as a conceptual lens and a diagnostic tool in turn, to delineate the specific structural and relational characteristics of a Chinese SME business owner value-adding *Guanxi* network. The research questions are placed in the sector-specific context of the Chinese construction industry. An egocentric-network perspective is adopted with the personal value-adding ego networks of four business owners and their main stakeholders are examined. In particular, by adopting the "six markets" stakeholder model (Payne et al., 2005) the relationship between the business owner and six key stakeholder groups was identified, quantified, analyzed, and visualized using SNA. Relationships were measured according to the frequency of communication, the value of favour exchanges, and the amount of emotional investment in the relationship (Granovetter, 1973; Wong and Leung, 2001; Mavondo and Rodrigo, 2001; Wang, 2007; Yen et al., 2011; Homans, 2013). Supplemented with qualitative interviews, the 'Chinese integrated relationship marketing' approach embedded in the business network is examined in terms of structural embeddedness (density), relational embeddedness (tie strength), and the prominence of key stakeholders (degree centrality). The objective is to contribute to the field of relationship marketing by further refining the theoretical perspectives relating to both the value-adding and social-networking aspects of *Guanxi* marketing and to demonstrate how its unique characteristics are rooted and manifested in social-network theory. In addition, since relationship marketing is fundamentally seen as "interaction within networks of relationships" (Gummesson, 1999: 73), our work seeks to contribute to such a 'paradigm shift' about how value is created and to add acknowledgement of the new *markets-as-networks* relationship forms.

We begin the paper by laying down the theoretical foundations for the research and exploring relationship marketing in both Western and Chinese cultures, underlining the cultural differences between the two settings. We then introduce the social-network approach and explain the main conceptual lenses pertinent to the study of the Chinese *Guanxi*. The following section describes the methodology adopted, including the research sample, data collection, analyses, and visualization techniques. We then outline the study's findings from the four case-study SME business owners. Finally, we assess the theoretical and managerial implications of our findings, discuss the limitations, and underline the opportunities for future research.

2. Literature Review

2.1 Relationship Marketing

Relationship Marketing (RM) is an approach designed to develop strong connections with a firm's main stakeholders, including customers, by promoting effective communication and fostering mutual commitment, trust, long-term engagement, and creating exchanges of mutually beneficial value (Christopher et al., 2002; Grönroos, 2007; Gummesson, 2008). The concept of *value exchange* is at the core of RM and is heavily influenced by the emerging service-dominant logic (SDL), as opposed to the goods-dominant logic, with which value is embedded in tangible goods. In SDL, what a buyer demands and consumes will be the value of skills and knowledge (intangibles) instead of the products/services per se (tangibles) (Vargo and Lusch, 2004; Grönroos, 2007). SDL concentrates on dynamic value exchange rather than static commodities exchange. RM can be a source of sustainable competitive advantage (Porter, 1990) and dynamic capabilities (Teece et al., 1997) because long-term relationships have unique high value, build barriers for potential entrants, and complicate imitation for rivals (Park and Luo, 2001; Yau et al., 2000). Christopher et al. (2002: 131) defined this type of competitive advantage as "collaborative advantage". It aims to enlarge the market by pulling together total demand rather than slicing it by well-managed stakeholder networks. Payne et al. (2005) developed the 'six markets' stakeholder model. The purpose behind the model is to highlight the importance of the connections between a firm and all its stakeholder groups in each of the six 'markets', including customers, referrals, influencers, recruitment, suppliers, and internal markets. These are explained below:

- Customer markets: The emphasis of RM is on developing and enhancing relationships with customers, so that they become "clients, supporters and, ultimately, advocates" (Sui Pheng, 1999: 156) of the firm. This is achieved by creating and sustaining value through a long-term perspective to relationships characterized by high levels of customer engagement, commitment, and trust (Payne et al., 1999).

- Referral markets: The significance of positive word-of-mouth endorsements was highlighted by File et al. (1992) who underlined it as an important part of the information-search strategy undertaken by clients before purchasing a high value or high-risk products or services. Clients often rely on third-party recommendations to reduce the associated risks when choosing between seemingly comparable products or services (Payne et al., 1999).

- Influencer markets: These markets comprise a wide range of actors such as financiers, investors, trade unions, industry and regulatory institutions, political and government bodies, the business press and media, and competitors (Payne et al., 2005).

- Recruitment markets: include all potential employees of the firm as well as third party actors who provide recruitment services to the firm by facilitating access to future members of staff such as job centres, employment agencies, and off-line and on-line advertising.

- Supplier markets: The suppliers of a firm are the providers of its physical resources and have been classified by Payne et al., (2005) into strategic, key, approved and nominated suppliers.

- Internal markets: The importance of internal markets was first underlined by Berry's (1981) concept of "employees as customers", in which the fulfilment of internal customers' needs is seen as a prerequisite to external customers' satisfaction. By satisfying employees' desires, they are likely to be more motivated and committed, and this translates into their superior performance and ultimately external customers' satisfaction and loyalty (Ballantyne, 2003; Ahmed and Rafiq, 2003).

The key supposition made by Christopher et al. (2002) is that the firm can only improve its relationship with customers/clients in the event that it clearly comprehends and manages its relationships with other pertinent stakeholders. However, RM requires a capable network orchestrator or champion to lead the system (Christopher et al., 2002; Prencipe et al., 2003). In small construction firms, typically, it is the business owner who plays the role (Pryke and Smyth, 2006).

2.2. Relationship Marketing in China—*Guanxi*

Guanxi is often considered to be the Chinese adapted and unique form of RM and management (Yau et al., 2000; Wong and Chan, 1999; Wang, 2007; Shaalan et al., 2013). A typical Chinese company is accustomed to living in a clan-like network, called

Guanxi wang (*Guanxi*-net), which includes the direct and indirect blood relationships, distant relatives, direct and indirect friends, colleagues, schoolmates, and others with interests (Luo, 1997; Styles and Ambler, 2003). Due to the low-trust culture (between strangers), the high institutional uncertainties and the imperfection of the legal systems in China (Luo, 1997; Wang, 2007), social norms have been playing a crucial role with *Guanxi* in regulating the social order and eliminating the uncertainties and chaos (Watt, 1999; Pun et al., 2000; Hammond and Glenn, 2004). *Guanxi* is underpinned by Confucianism—the principal value system governing Chinese social behaviour as well as business dynamism (Yum, 1988; Redding, 1993; Bond and Hofstede, 1990). Propagated by Confucius and his followers in the 6th–5th century BC, 'Confucianism' is a philosophical ideology that stresses the need to maintain an orderly and stable society through principles such as the importance of family relationships, self-discipline, willingness to compromise, and a commitment to maintaining a harmonious society (Su et al., 1998; Watt, 1999; Pan et al., 2012).

Both Western RM and *Guanxi* marketing emphasize a long-term orientation and cooperation between exchanging parties. However, a closer examination of the underlying relational mechanisms of RM and *Guanxi* will enable a clear distinction to be made between the two concepts. This could be better explained by revisiting Hwang's (1987) relational dimensions of a tie. Hwang (1987) defines three types of relationship: expressive, instrumental, and mixed ties. Expressive ties are characterized by high levels of stability, closeness, and emotional attachment and are often shared among family members and blood relations. On the other hand, instrumental ties, also known as transactional ties, are temporary, impersonal, and task-driven relationships with people outside one's family. RM exhibits more characteristics of such an instrumental tie that are usually impersonal and mostly at the organization level (Morgan and Hunt, 1994). The third relationship—the mixed tie—is the hallmark of a business *Guanxi* relationship, and combines elements of both the expressive tie and the instrumental tie. While the relationship is not as close as that of a blood relative, members of a *Guanxi* network are bound by close friendships, emotional attachments, and favour exchanges

(Yeung and Tung, 1996; Luo, 1997; Wong and Chan, 1999; Yau et al., 2000; Styles and Amber, 2003). Indeed, business *Guanxi* extends from traditional *Guanxi* (based on family and close friends) and develops from an initial arm's-length inflexible interpersonal relationship to a long-term close relationship, thus gradually evolving from being considered an outsider, into a trusted and valued insider (Lo and Otis, 2003). This *Guanxi*-enhancing transformation in business relationships is founded on maintaining an acceptable balance among three key elements: emotional attachments, reciprocal services, and the pursuit of economic benefits (Yang and Wang, 2011).

Wang (2007) points out the universalistic vs. particularistic difference between RM and *Guanxi*. While RM has a universalistic nature, in that the network is relatively open to any exchange partners who abide by common conventions, *Guanxi* is a highly exclusive network of mutual dependence whereby only insiders within the very *Guanxi* network can tap into its relational resources, while outsiders cannot (Yang and Wang, 2011). Herein, there are two essential concepts of the *Guanxi* network in Chinese economy that need to be explained. First, *mianzi* (face) is regarded as "social currency and personal status" in the *Guanxi* network, which is often decided by power and wealth (Luo, 1997). *Mianzi*-saving can be viewed as a strategy to protect self-reputation (Hammond and Glenn, 2004). Another factor to make *Guanxi* function is '*renqing*', which "is a unique term in Chinese culture, often referring to the resource that one can present to another person as a gift in the social exchange process, and a set of social norms that one should follow to get along well with other people" (Hwang, 1987, cited by Wang, 2007: 82). For instance, if B were to ask A for a favour with value P, B would owe A a *renqing*, similar to an unpaid obligation with value Q (Q>P). Certainly, the Chinese feel obliged not only to repay favours received, but also to increase the value of the favour given to themselves (Watt, 1999); abiding by the rule of reciprocity, which decrees: "If you have received a drop of beneficence from other people, you should return a fountain of beneficence" (Hwang, 1987). If B were not to pay back *renqing* with a fair value, B would violate the "unspoken rules of reciprocity and equity" (Luo, 1997: 45) and would lose *mianzi* in A and B's *Guanxi* network. The continuity of safeguarding *mianzi* and exchanging *renqing* has harmonized the *Guanxi* network, which Wong (2008: 27) summarizes: "*Guanxi* is generally a hierarchically structured network of relationship embedded with mutual obligations through a self-conscious manipulation of *mianzi* (face), *renqing* (favour) and related symbols." This is in clear contrast to Western societies' emphasis on 'short-termism' and symmetrically reciprocated exchange relationships (Wang, 2007).

Furthermore, while the Western management culture promotes an individualistic perspective with the individual as the basic building block of society, Chinese management culture, on the other hand, is largely collectivist and stresses the importance of the 'family' and the acceptance of hierarchy, with paternalistic and personalistic management approaches prevailing in Chinese business (Redding, 1993). Social relationships often precede and are essential to any business relationship and Chinese business dealings are often based on contacts with specific individuals rather than among organizations (Davies et al., 1995). In fact, the relationship between individual *Guanxi* and organizational *Guanxi* is mostly dynamic and interactive, by which personal relations, mostly of the business owner in the case of SMEs, are gradually converted—proactively or passively—to organizational connections (Wang, 2007; Yang and Wang, 2011). This transition, largely dependent on the firm's culture, structure, formality, and institutional environment, is seen to be crucial in enhancing the firm's marketing capability and performance (Gu et al., 2008; Yang et al., 2010). This may present challenges to Western firms accustomed to selecting business partners objectively on the basis of reputation, brand, and corporate image (Campbell et al., 2010). Indeed, it will cause problems if one neglects the differences of historical and cultural context when introducing or applying new concepts into a new environment (Hofstede, 1997) and Shaalan et al. (2013) recommend that international firms entering the Chinese market should combine *Guanxi* with RM, rather than exclusively following the management styles of Western firms.

2.3 The Social-Network Approach to *Guanxi*

A social network consists of a finite set of actors who are connected via a set of relations with a specified content (Wasserman and Faust, 1994). Network theory attempts to explain the effects that different structural properties may have on the actors. Social-network theory has unified terminology, which will be briefly introduced in Table 1 below.

<INSERT TABLE 1 ABOUT HERE>

Hammond and Glenn (2004: 24) propose that *Guanxi* is a special and ancient form of social-network theory that "defines one's place in the social structure and provides security, trust and a prescribed role". Yang and Wang (2011) also draw attention to the close similarity between business *Guanxi* networking and egocentric social networks. An egocentric approach was adopted that consists of a focal actor, termed 'ego', immediate contacts, known as 'alters', who have ties to ego, and measurements on the ties among these alters (Wasserman and Faust, 1994: 42). This section aims to elucidate three ego-network characteristics: structural embeddedness (density), relational embeddedness (tie strength) and actor prominence (degree centrality) in social-network theory and to redefine them within the context of *Guanxi*'s form.

Closely associated with social-capital theory (Adler and Kwon, 2002; Nahapiet and Ghoshal, 1998; Uzzi, 1997), the term *embeddedness* goes back to Granovetter's (1985) assertion that most economic behaviour is embedded in networks of social relationships. Structural embeddedness is the "configuration of linkages between people" (Nahapiet and Ghoshal (1998: 244) in terms of the presence or absence of ties between network actors, and is represented in our study by network 'density'. The density of a network measures the proportion of all ties that are present, compared to the total number that is possible for a given network. Network density provides a measure of the 'connectivity' and the speed at which information diffuses in the social network (Hanneman and Riddle, 2005). There are competing claims in the literature about the benefits of certain network structures to the realization of valuable network resources, particularly Coleman's (1988) network cohesion argument vs. Burt's (1992) structural holes thesis. Coleman (1988) argues the benefits of being embedded in dense and cohesive networks that foster the building of trust between exchange parties, encourage knowledge-sharing, and restrict opportunistic practices. Thus the function of the concept of cohesion coincides with that of *Guanxi* in the Chinese economic context. On the other hand, Burt (1992) argues the benefits of being embedded in a network rich in structural holes, i.e. absent ties among those to whom one is connected. This is mainly due to the unique position that an individual occupies that enables them to bridge disconnected groups, broker information among those contacts, and enjoy access to non-redundant and valuable information and resources (Burt, 1992). Intriguingly, support is found to the benefits of both characteristics of network structure for an entrepreneurial business, showing how some business environments may simultaneously reward business owners who focus either on closure or structural holes strategies (Baum et al., 2012; Lowik et al., 2012) while penalizing those who pursue neither approaches to business networking.

The second characteristic is 'relational embeddedness' defined by Nahapiet and Ghoshal (1998: 244) as the "personal relationships people have developed with each other through a history of interactions". Granovetter (1973: 1361) defines 'tie strength' as a "(probably linear) combination of the amount of time, the emotional intensity, and intimacy (mutual confiding), and the reciprocal services which characterize the tie". In the case of *Guanxi*, tie strength is often determined by the amount of emotional bonds between two parties (Yang and Wang, 2011). Arguments about the importance of strong ties and weak ties have been propagated for decades. Strong ties offer trustworthy and reliable resources for the involved actors, whereby information can spread fast. Weak ties, on the other hand, can bring valuable and novel ideas to the clustered networks (Granovetter, 1973). By the language of *Guanxi* network theory, the strong ties are named insiders (*zijiren*) and weak ties are outsiders (*wairen*) (Hammond and Glenn, 2004). However, as *Guanxi* is a dynamic networking approach, outsiders can be transformed into insiders with long-term accumulated endeavour, such as trust-building activities, emotional bonding, favour exchange, and other reciprocal behaviours (Yau et al., 2000).

The third network characteristic that is of interest in this study is 'actor prominence', or importance, in the network. Actors are said to be prominent if their ties afford them high visibility among other actors in the network (Wasserman and Faust, 1994). One of the more commonly used measures of prominence is 'degree centrality', which is concerned with the number of ties that an actor has with other actors and is a simple count of the number of the actor's network relationships. An actor with a high degree centrality can communicate directly with many other actors, acting as an important conduit for information, and therefore enjoys high visibility and prominence (Wasserman and Faust, 1994). Examining resource-provision ego networks in small Greek construction firms, Pryke et al. (2011) have found that higher levels of entrepreneurial behaviour are supported through dense networks in which prominence is shared among multiple network actors.

A number of studies have attempted to investigate the distinct characteristics of an SME business owner's social network during the different stages of a firm's life cycle. However, a consensus is yet to be reached on the optimal network characteristics that promote a firm's growth, success, and survival. In a study by Brüderl and Preisendörfer (1998) on the effect of network support on the success of newly founded business, strong ties, and particularly family relations were found to be critical for a firm's survival. Hoang and Antoncic's (2003) critical review of network-based research in entrepreneurship also underlines the importance of strong ties as sources of low-cost resources during the start-up and early establishment stages of the firm development. Hite and Hesterly (2001) conceptualize the evolution of firm networks from emergence to the early growth of the firm. They proposed that, as firms grow, a more balanced structure of both strong and weak ties is established in which strong ties are gradually replaced by weak arm's-length and diverse ties. These weak ties are seen to offer greater opportunities for growth and development through the provision of higher value in terms of advice, novel information, and brokerage opportunities (Aldrich and Zimmer, 1986; Cooper et al., 1995; Lechner and Dowling, 2003). Jack et al. (2008) conducted a longitudinal study of change and the development of entrepreneurial networks over time. Their findings confirm the importance of strong ties through all stages of a successful entrepreneurial firm's life cycle. Nonetheless, Jenssen and Koenig (2002), examining the effect of social networks on access to resource in business start-ups, have contended that a firm's growth is not essentially contingent on the strength of its ties, as resources can flow through both weak and strong ties. This follows the arguments made by the study of Shaw (2006) on small-firm networking, which emphasizes the significance of having the best of both worlds, the brokerage opportunities of weak ties, and the trusting and supportive environment provided by strong ties.

To conclude, we propose that an SME business owner's *Guanxi* relationships can be represented as a value-adding stakeholder ego network. Three characteristics of the ego network will enable a more superior understanding of how the SME business owner operates business through *Guanxi*, being: network density, tie strength, and degree centrality, as proxies for structural embeddedness, relational embeddedness, and the prominence of key stakeholders respectively. Furthermore, the comparison of network density, tie strength, and degree centrality of networks of start-up firms, with networks of established firms, will enable the identification of structural differences between start-ups and established firms, as well as providing quantitative data about the changing role of *Guanxi* during the different stages of a firm's life cycle.

3. Methodology

3.1 Context: The Chinese construction industry

This study was carried out in China—the world's 'factory'—an economy that has seen rapid development with Gross Domestic Product (GDP) growing by over 8% annually in recent years (NBSC, 2013). As the foundation for economic growth, such as infrastructure and urban development, the construction industry grew from 3.8% of GDP in 1978 to 6.8% in 2012 (NBSC, 2013). SMEs encompass 97% of all firms in China and are responsible for 80% of total employment and contributed 59% to GDP in 2011 (OECD, 2015). The majority of SMEs are in the services sector, including 4% in construction and real estate (OECD, 2015). Enterprise reforms in the 1990s, such as the 'corporatization' programme, have transformed the ownership of Chinese construction firms from traditional state and collective ownership to a mixed economy with diversified ownership structures (OECD, 2000).

The importance of *Guanxi* in the Chinese construction industry, especially in SMEs, is driven by the transitional economy from state- and collective-owned enterprises towards market economies, resulting in weak institutional environment characterized by imperfect legal systems and underdeveloped market mechanisms (Wong and Chan, 1999). Unfair practices, such as the triangle debt and unequal bidding processes, have complicated procurement practices and have yielded a more challenging project-marketing. Private midstream and downstream contractors are forced to offer trade credit to their buyers to enhance competitiveness as a result of the asymmetric bargaining power between layers in the supply chain (Wang et al., 2006). Therefore, project-financing can be challenging to a firm's survival, especially with opportunistic clients and contractors. The majority of private firms secure their contracts by competitive bidding. Public clients especially are more likely to take advantage of the competitive bidding process for their own benefits, because of the lack of transparency and accountability (Wang et al., 2006). Therefore, private contractors are fragile in this process, and are faced with shrinking profit margins; gift-giving and trade credit during construction continue to prevail (Luo and Peng, 2000). As a competitive strategy, *Guanxi* is thus utilized by SME private firms in China's construction industry as a means of obtaining resources, such as repeat business, bureaucratic convenience, psychological contracts, and transaction savings (Wang et al., 2006).

3.2 Research Design

Most research on business-network structure and associated relationships have relied on quantitative methods (Chell and Baines, 2000; Jack, 2010; Shaw, 2006). Quantitative research is seen to offer great statistical advantages, particularly as it allows large amounts of data to be collected and analyzed in a logical and replicable way (Fellows and Liu, 1997; Amaratunga et al., 2001). However, the reliance on quantitative, mostly survey-based methods may obscure the rich detail and real-world context in which the phenomena occur, and may lead to incorrect analysis and interpretation (Pryke, 2012). Qualitative research, on the other hand, is often used in the exploration of a subject area in which only a limited amount of knowledge exists. The objective of qualitative research is to collect and analyze information from which new knowledge can be inducted (Eisenhardt and Graebner, 2007). In this study, the aim is to analyze and visualize the dynamic concept of *Guanxi* as the Chinese approach to RM through analyzing the structural characteristics of Chinese construction-SME-owners' personal value-adding networks, particularly in terms of identifying the main stakeholders that the business owner has chosen to connect to, the strengths of these relationships, how these ties are built and maintained, and which stakeholder groups are the most important to an entrepreneurial business during different stages of an SME firm's life cycle. These questions are largely exploratory, contextual, and descriptive with the purpose of providing an in-depth understanding of the business owner's social context. Thus a qualitative case-study approach seems to resonate with this research study.

Through a qualitative lens, Yin (2014) also adds that case-study methodology is suitable for examining projects when the researcher has control neither over the behaviour and dynamics of the individuals involved nor over the boundary-spanning organizational situations. A multiple-case-study approach involving four SME business owners was chosen as the most suitable research strategy in order to obtain in-depth detail within the Chinese construction context. As opposed to a single case, multiple cases enable a broader exploration of research questions, provide varied empirical evidence, and allow comparisons to be made that explain whether an emergent finding is merely distinctive to a single case or consistently replicated by several cases, thus supporting the generalizability of findings (Eisenhardt and Graebner, 2007).

SNA was also employed to enable the structural analysis and interpretation of the SME-owners' personal value-adding networks. SNA "involves the representation of organizational relationships as a system of nodes or actors linked by precisely classified connections, along with the mathematics that define the structural characteristics of the relationships between the nodes" (Pryke, 2012: 78). An egocentric approach which consisted of a focal actor, the business owner (ego), his immediate contacts (alters), and measurements on the ties among them (Wasserman and Faust, 1994: 42) was adopted. These 'alters' and their relationships with the 'ego' were the units of analysis in this study. In classical studies, such as Burt's General Social Survey (GSS) (Burt, 1983) and Fischer's Northern California Community Study (NCCS) (McCallister and Fischer, 1978), the ego is often the provider of all the data in an ego network, and it is thus an ego-perceived network. The ego provides the alter attributes and alter-alter connections. The objective of an egocentric study is often to understand how the ego makes use of, or is influenced by, the alters (Prell, 2012). In this study, the combination of a case-study approach and SNA supported both a qualitative and quantitative understanding and interpretation of the SME business-owners' social contexts, challenging the quantitative/qualitative schism (Jack, 2010).

3.3 Research Sample

Four case studies were selected following set criteria to maximize what could be learned from the study. Selective sampling is often pursued in qualitative inquiry as a practical approach (Schatzman and Strauss, 1973) and "refers to a decision made prior to beginning a study to sample subjects according to preconceived, but reasonable initial set of criteria" (Sandelowski et al., 1992: 302). In this study, four Chinese SME construction firms were selected, following the criteria below:

- **Ownership:** The investigated firms were to be completely privately owned limited companies. The owners were to be the only legal representatives of their enterprises.

- **Size:** Firms selected were to be SMEs of no more than 50 employees. As financial statements would not be available, the number of employees would be the only measurement of a firm's size.

- **Time of operation:** Two firms were to be selected to represent established firms operating for more than ten years (Ostgaard and Birley, 1994; Covin and Slevin, 1990), and two were to be selected to represent start-ups of five or less years of operation (Jenssen and Koenig, 2002). This was to enable the identification of any structural differences between these two types of firms.

The four firms selected are located in two tier-3 cities in northern China. The basic characteristics of the selected firms and business owners' type of activities and projects are displayed in Table 2. In order to protect the anonymity of respondents, the names used are abbreviated.

<INSERT TABLE 2 ABOUT HERE>

3.4 Data Collection

Interviews are useful in gathering egocentric network data having the potential to produce insights and to expand one's understanding of the structural analysis (Wasserman and Faust, 1994). In this study, the interview plan was divided into two sections: the quantitative SNA questionnaire, supplemented by a set of qualitative open-ended questions, as shown in Tables 3 and 4. The interview plan was tested by a pilot interview with a Chinese entrepreneur with professional qualifications similar to those of the respondents, in order to assess the method's clarity and appropriateness, and the interview plan was modified accordingly (Haigh, 2008). The four SME business owners were first approached via telephone and e-mail to introduce the study, gain their commitment, and arrange a suitable interview date. Each interview was conducted in the respondent's office, typically in a company meeting room. The entire interviews were conducted in Mandarin and administered by a Chinese member of the research team. With the consent of each of the respondents the interviews were recorded, which allowed for the dialogue to be later analyzed and prevented the loss of any supplementary information (Chisnall, 1997). Respondents were also assured that all responses would remain anonymous and no identifying information would be used (Yin, 2014). On average, each interview lasted between 1.5 to 2 hours. The four interview recordings were firstly transcribed verbatim and later translated to English by a specialist translation company. The interview transcripts were saved as Word files and the SNA data was saved as Excel files for later processing. The data was inspected and analyzed independently by two researchers to ensure the reliability of the findings. The SNA questionnaire and the qualitative questions will be further explained below.

<INSERT TABLE 3 ABOUT HERE>

<INSERT TABLE 4 ABOUT HERE>

3.4.1 Quantitative SNA data collection

In this study, the personal value-adding network of the SME business owners rather than the organizational network of the firms are studied. During the interview, the interviewer was responsible for recording in paper-and-pencil format the needed information as shown in Table 3. The respondent was asked a set of exchange-type 'Name Generator' and 'Name Interpreter' questions (McCallister and Fischer, 1978). In this method, according to Van Der Gaag and Snijders (2003), the egocentric network was initially mapped for a subsequent social-resource inventory. 'Name generators' are free recall questions employed to identify the respondent's alters, while 'name interpreters' are utilized to identify alter attributes as well as ego-alter and alter-alter relationships (Van Der Gaag and Snijders, 2003).

In this study, the respondent was asked a single 'core'-network identifying name-generating question: "Can you list all individuals who you believe are important, i.e. add value to your business, focusing on the past 12-month period?" The aim of this question was to elicit data on ties that have a direct influence on the value-adding activities of the firm, attending to Hoang and Antoncic's (2003) call for a greater precision of tie-content measures in network-based research in entrepreneurship. Respondents were allowed to refer to their network members by full name, surname, or initials, or any other type of information that could distinguish separate individuals. Following a 'realist' approach to boundary specification, the number of names that could be mentioned was unlimited (Wasserman and Faust, (1994). Thus, the network boundary was defined by the respondents, since they themselves identified the number of relevant actors. The result was a list containing a minimum of 21 network members (Firm 3–Zhang L) and a maximum of 35 (Firm 3–Du B). Given that earlier research has underlined a tendency for some relationships to be forgotten in interview settings (Brewer and Webster, 1999), the list was subsequently shown to the respondent to review and to confirm that no important relationship was missing from the list.

When the list of alters was complete, the name-interpretation section of the interview commenced. Respondents were first asked to classify the alters into distinct groups, administered by the interviewer in discussion with the respondent. The "six markets" model (Payne et al., 2005) was adopted to provide a framework for business owners to classify their stakeholders, who add value to their business. The original model by Payne et al. (2005) is for the general business, but these dimensions are parallel and have no priorities. As this study focuses on construction services in Chinese SMEs, some adjustments were made as outlined in Table 5. First, the term 'customer' was replaced by the term 'client', defined as "the natural or legal person for whom a structure is constructed, or alternatively the person or organisation that took the initiative of the construction" (OECD, 1997, p. 11). In addition, given the challenging financial conditions that construction SMEs are faced with (Wang et al., 2006; OECD, 2015), as well as the profound influence of government on Chinese business practices (Siu et al, 2006), the influencer market was subdivided into financing markets (investors, bondholders, and bankers), and authority markets (government officials) as the focus of the study. Finally, the 'recruitment markets' subgroup was beyond the scope of this study. This was mainly due to the study's focus on existing value-adding connections rather than relationships with future-value propositions (Michaels et al., 2001). Peck (1997) also justifies this exclusion by asserting that it is only time that separates relationships with future employees from those with existing ones, who fall within the 'internal markets'.

<INSERT TABLE 5 ABOUT HERE>

Subsequently, respondents were asked to classify the type of relationship with alter (business or personal). The strength of tie was then examined, taking into account three characteristics of the relationship between ego and each alter: (a) the frequency of communication, (b) the value of favour exchanges, and (c) the amount of emotional investment in the relationship. The decision to adopt these three distinct aspects of relationships to construct a measurement of tie strength is explained herein. First, the work of Granovetter (1973) and Homans (2013) has emphasized the importance of frequent contact between egos and their alters in developing strong and supportive relationships. Secondly, the exchange of favours, such as gift-giving, wining and dining together, and visiting and participating in each other's events, are important elements of a *Guanxi* relationship and are a reflection of reciprocity (Wong and Leung, 2001). Lastly, the third measure of relationship strength that is used in this study is the amount of emotional investment in the relationship, which indicates the mood and tone of a social relationship among the two actors in terms of the amount of affection and expressive sentiment (Mavondo and Rodrigo, 2001; Wang, 2007; Yen et al, 2011). In this study, these three aspects are considered equal and their association with *Guanxi* strength are assumed to be positive, with Likert scale values recorded for frequency of communication (score 1–3) (e-mail, phone call, letter, or face-to-face conversations are collectively represented as a communication relationship between the two actors), value of favour exchanges (score 0–3), and emotional investment (score 0–3).

Finally, to provide information for the investigation of network structure, the relationships between alters was investigated. The respondent was asked to comment on his/her perception about how alters are connected to one another. It should be noted that only the strength of ties that directly relate to the egos was subjectively valued by the respondents, because the egos are unable to value the tie strength between other alters.

Trusting the respondent to provide this self-reported data exposes, however, the study to the risk of the respondent's cognitive biases. Early work by Bernard et al. (1979) has underlined the discrepancies between an individual's communication networks and his/her self-reported networks, with bias against infrequent and casual contacts. Hence, Bernard et al. (1979) contend that self-reported networks should be accepted as socio-cognitive networks rather than actual behavioural networks. This should not reduce the value of such studies (Hogan et al., 2007), and Batchelder (2002) emphasized the need for a clear theoretical link between the research question and the means of data collection. In our study, we have looked at alters which the egos perceive as important and as adding value to their businesses. As these questions are concerned with examining the immediate perceived network surrounding ego, they are thus in tune with personal-network methods.

3.4.2 Qualitative data collection

The second part of the interview comprised three follow-up questions to supplement the SNA data as outlined in Table 3. The questions were designed to elicit the respondent's perception of the relative importance of the six markets (subgroups) to his/her business, whether this importance ranking changed as the firm matured, and the extent to which *Guanxi* affects (positively and negatively) the firm's performance during its distinct developmental stages.

3.5 Data Analysis

SNA includes a set of measures that enable a qualitative examination and quantitative analysis of the relationships between actors (Mills et al., 2014). With the help of dedicated SNA software packages, research into social networks has been able to understand and describe a wide range of network features. In this study, we employ UCINET 6, a program developed by Borgatti and his colleagues for the social sciences (Borgatti et al., 2002). UCINET 6 was selected from a number of available tools because of its relative ease-of-use and a wide range of analysis options (Huisman and Van Duijn, 2005). Analysis was conducted focusing on three measures of the ego network: density, tie strength, and degree centrality. This is because they represent a broad range of ego-network characteristics, being structural embeddedness, relational embeddedness, and prominence of key stakeholders respectively.

First, the density of an ego network is an indication of the business owner's structural embeddedness and is defined as the percentage of all possible ties that are actually present, excluding the ego. Density essentially looks at how many ties there are in a network vs. how many ties there could possibly be (which is calculated as: Number of nodes X number of nodes–1/ 2).

Secondly, following Granovetter (1973), Friedkin (1980) and Van der Gaag and Webber (2008), tie strength is computed as the simple sum of the frequency of communication, favour exchanges, and the value of emotional investment in the relationship. With the three elements considered equal, a measure of tie strength is devised by *a linear* combination of the three elements (Granovetter, 1973) and a summative scale, the measure of tie strength, is constructed by adding together the values of each element as reported by ego.

With ties measured as strengths, a decision needed to be made on when to specify a tie as strong, weak, or transactional. Hanneman and Riddle (2005) recommended that a reasonable solution is for the researcher to define a threshold or cut-off value from the valued data to identify whether a tie between two actors exists or not. The selection of this value, however, should not be arbitrarily but theoretically informed, e.g. How often does one actor have to communicate, exchange favours, and be emotionally attached to another actor in order for their relationship to be identified as a strong tie? In this study, when the total sum is 5 —observed as a median value separating the higher half of the data sample—and above, it is classified as a strong tie; 2–4 is a weak tie; and a score of 1 represents a transactional tie, i.e. a tie with contact of less than once a month, and no favour exchanges or emotional investment in the relationship. A comparison between the number of strong, weak, and transactional ties in the ego's network will provide an indication of the relational embeddedness of the ego's value-creation ties.

Finally, degree centrality measures how connected an actor is within a social group and is calculated by simply counting the number of connections an actor has. An actor with a high degree centrality in the ego network omitting ego can communicate directly with many other actors and is highly visible and prominent (Wasserman and Faust, 1994).

The UCINET software was also used to convert the mathematical values of the data into network diagrams (also known as sociograms) using a facility called 'Netdraw'. The personal value-adding networks of each ego are presented in two ways, either with ego or without. In the sociograms without egos, degree centrality attribute of alters is also exhibited and represented by the size of the node to visually indicate the prominence of specific stakeholders. Three different shapes of node in sociograms—square, triangle, and circle—represent a strong tie, a weak tie, and transactional tie respectively. Although there are no specific procedures for the inspection of the generated diagrams, we drew conclusions by combining our intuition with the cross-referencing of both the graphical sociograms and the generated indices (Wasserman and Faust, 1994).

4. Findings

The four cases were divided into two pairs: the two start-up firms (Firms 1 and 2) and the two established firms (Firms 3 and 4). This section will first compare the structural characteristics of each pair in terms of density, tie strength, and actor centrality, as well as the findings of the follow-up interview questions. Subsequently, a comparative discussion between the four cases will be presented. Table 6 summarizes the main findings of the case-study SMEs while Figures 1 and 2 illustrate the personal value-adding networks of each ego, presented in two ways, either with ego or without.

<INSERT TABLE 6 ABOUT HERE>

<INSERT FIGURE 1 ABOUT HERE>

<INSERT FIGURE 2 ABOUT HERE>

4.1. Characteristics of the *Guanxi* Networks of the Two Start-up Firms

Firm 1 (Zhang L) and Firm 2 (Ding) are small interior-finish firms operated by young designers (see Figure 1). The overall density of Zhang L's network (0.887) is higher than that of Ding's network (0.492). By omitting the ego in Ding's network (see Figure 1) there are four isolates, two dyads, and two cliques (fully connected groups), but with weakly linked groups formed by mainly internal employees, referrals, and clients. While in Zhang L's network omitting ego (see Figure 1) except for one isolate, the remaining alters are well connected. In Zhang L's network, prominent actors without ego reside in the internal market in the form of his two partners, while in Ding's network, prominent actors are a clique-like group of referrals and internal employees, as well as the triad-like group of clients.

In terms of tie strength, as shown in Figure 1, strong ties (represented by square) dominate in Firm 1's (Zhang L) network, with 11 strong (52.4%), 9 weak (42.8%) and

1 transactional (4.8%). In the case of Firm 2 (Ding) weak ties (represented by triangle) are prevailing with 12 weak (48%), 9 strong (36%), and 4 transactional ties (16%) from the supplier markets (represented by circle).

Beyond the SNA data, Ding (Firm 2) considered strong ties (sourced from kinship and schoolmates) as a springboard to wider resources. When a certain kind of resource becomes critical, he would build *Guanxi* (from weak to strong ties) with the relevant contacts to search for competitive advantage. Although *Guanxi* maintenance often comes at a high cost in terms of time and expense, a high return is expected afterwards. In contrast, Zhang L and his business partners deemed the quality of services to be the core criterion in their business performance. Nevertheless, *Guanxi* would help to better communicate with other stakeholders, especially with clients and suppliers, to facilitate the utilization of their knowledge and expertise in projects. Thus both Ding and Zhang L heavily rely on *Guanxi* in their business, albeit ranking the importance of the six markets differently. In terms of *Guanxi* utilization to attract and retain clients, Ding's approach to business development is more 'traditional', as he secures projects through personal relationships from his existing *Guanxi* network of public organizations and property-development firms. On the other hand, Zhang L's approach is more 'Westernized' in project-based services in China, as he occasionally engages in transactions directly with qualified exchange parties in the open market. The difference between the two approaches adopted by Zhang L is the level of *Guanxi* tie strength involved. Zhang L's business dealings are often conducted within the boundary of the existing *Guanxi* network with individuals whom he knows at an interpersonal level, with high levels of emotional attachment and trust as a basis for conducting transactions. At times, however, the firm engages with the open market, in which relationships often commence at arm's length, are less personal, and are at the organization level. Subsequently, these relationships often develop into trusting cooperative relationships, *Guanxi*, through repeat business. Thus, Ding considers *Guanxi* to be an important strategy for winning projects, while Zhang L considers and promotes the transactional approach with more focus on the project's design and the services' quality improvement.

Moreover, both Ding and Zhang L have cooperative suppliers who recommend business for them, while promoting the sale of their own products in return.

4.2 Characteristics of the *Guanxi* Networks of the Two Established Firms

Firms 3 (Du B) and 4 (Sen) are larger and more established firms in the investigated sample (see Figure 2). Through observation of the graphical sociograms and the generated indices, the density of the ego network of Firm 4 (0.809) is found to be higher than that of Firm 3 (0.533). Firm 4 (Sen) has the advantage of accessing the exclusive market of a local state-owned enterprise consisting of a variety of diversified subordinate firms. Being a former employee of that state-owned group, Sen has a long-term friendship with a large number of senior managers of those firms (represented by green squares in Figure 2). Sen's social-network structure displays a clustered characteristic. In Firm 3, the business owner (Du B) is an experienced project-manager who previously worked for the government before starting her own business, taking over a shareholding company and gradually transforming it into a completely private limited company. However, Du B's social network is lower in density because of the fragmented suppliers and client markets.

In Figure 2, Sen's network is displayed while omitting ego, which shows that each alter can be linked to at least one other alter, while in Du B's network removing the ego results in three isolates and the remaining alters are well connected. Moreover, both Sen's and Du B's networks exhibit a high level of connectivity in the internal markets shown in the sociograms omitting egos (blue nodes sized according to degree centrality). In addition, both Sen's and Du B's networks show clique-like components (fully connected groups) in authority and referral markets. In fact, the two markets completely overlap in both cases, which indicates that their personal friends who would provide them with critical word-of-mouth endorsements are local officials. Moreover, in both networks, prominent actors without the egos reside in the internal market, being senior employees, managers, and technical directors within the firm.

In terms of tie strength, as shown in Figure 2, strong ties (represented by square) dominate in both Du B's and Sen's ego networks. In Du B's network, only 6 out of 35 ties are weak ones (represented by triangle) and 3 are transactional ties (represented by circle) from 2 suppliers and 1 banker. Thus strong ties are prevailing (74.3%) as opposed to the weak (17.2%) and transactional (8.5%). In Sen's network, similarly, only 4 out of 33 ties are weak ties and 2 transactional ties from suppliers. Again, strong ties (82%) are leading as opposed to weak (12%) and transactional (6%).

Beyond the SNA data, the findings of the open-interview questions identified that strong ties in the case of the two established business owners are often sourced from kinship, while some are cultivated considerably through arranging dinners and other social events, giving gifts on special occasions (weddings, baby full-moon, festivals, etc.) and offering favours when needed. In return, the business owners may receive employees' loyalty, bidding opportunities, candidate recommendations, confidential information, simplification in bureaucracy, and most importantly—customers' delight. For public clients especially, the investment in personal *Guanxi* could be more significant, as both entrepreneurs stated that repeat business represented 80% of their operation. Both Du B and Sen also offer privileges to their regular clients, based on the "iron triangle" (Barnes, 1988) - lower price, higher quality, and shorter duration, as well as more trade credit. Du B considered the internal market of talented employees and authority/referral markets to be the most important markets in her business, while Sen relied more on the client and authority/referral markets. Both heavily relied on their political ties due to triangle debt in the construction industry, as friends in government had *mianzi* to help with arrears-claiming. At the start-up stages of the firms, both Sen and Du B had sought to build *Guanxi* with powerful stakeholders. Nevertheless, their view was that *Guanxi* alone cannot ensure the growth of the business. Growth requires substantial efforts in terms of service quality, technological improvement, and infrastructure update, among others.

4.3. Cross-case discussion

The data collected represents a ‘snapshot’ of the business owners’ *Guanxi* networks at a specific point in time, the time the interview was conducted. The dynamics of *Guanxi* in the transitional economy of China thus cannot be observed. However, a number of interesting observations can be deduced by comparing the stakeholder networks of the four firms. Table 6 shows that Zhang L (Firm 1) and Sen (Firm 4) have a higher network density than Ding (Firm 2) and Du B (Firm 3). The density of the four networks may vary in relation to the different operating patterns of the owners. Because there is no parameter or formula to judge the optimal level of density (cohesion and connectivity) for the effective functioning of the social network, it is appropriate to take a contingency approach to discuss the issue under the specific context. Firstly, no association was identified between network density and the age of the firm. Density may thus be contingent on other factors, such as business strategy or risk-orientation. For instance, Sen (Firm 4) has a high network density because he is involved in a closed environment; a large client. A closed network may help information flow and increase peer-monitoring of opportunistic behaviour. However, the heavy reliance on a single client may represent a high-risk strategy, as any turbulence in the client’s activities is likely to have a large impact on the firm. Zhang L’s (Firm 1) network also exhibits high density because of the close intra-market relationships, but his target audience is the private residences and one-off projects. Because Zhang L differentiates his services by design quality, he reduces the risk of discontinuity of workload. Secondly, the close relationships between client and supplier markets contribute to higher density in the sample, because the two are relatively large groups, but financing markets are small groups in all cases. In the case of Ding (Firm 2) and Du B (Firm 3) the networks display low density due to the fragmented suppliers and client markets with fewer intra-market ties and small-authority markets.

Additionally, *Guanxi* ties (strong and weak ties) are dominant in all four cases. The number of strong ties exceeds that of weak ties in most cases, except for Ding’s network.

It could be observed from the comparative study that the two older firms, Du B's and Sen's, display a higher degree of relational embeddedness (a percentage of strong ties compared to weak and transactional ties—see Table 6 below) than the two start-up firms, Zhang L's and Ding's, thus with more social behaviours embedded in economic actions (Granovetter, 1985). However, concerns could be identified with regards to over-embeddedness. Over-embeddedness may constrain the innovation and growth of the business (Li and Sheng, 2011). Indeed, Li and Sheng (2011) contend that older managers may require weak ties and transactional ties at arm's length to renew the business network and introduce innovative ideas. Although the development of Du B's and Sen's firms is at the mature stage, it still requires fresh blood to bring about innovation and new ideas. Such embeddedness may, however, be beneficial for start-up firms to obtain competitive advantages and overcome the burden of scarce resources (Li and Sheng, 2011).

An examination of prominent actors within an ego network may underline the key markets that influence the owners' business. In Du B's network, prominent actors reside in the internal market of the top technical teams within the firm, with multiple responsibilities for the daily operation with internal workers and negotiation with clients. In Sen's network, the prominent actor also resides in the internal market of the firm, being the vice executive and a previous partner of Sen. He almost has the equivalent influence with Sen in Sen's firm; the result is not surprising. In Zhang L's network, prominent actors are in the internal market, being the two business partners and close friends. As young entrepreneurs, they assume responsibility for multiple roles within the firm. In the four cases, all ties between the owners and the internal market of employees are *Guanxi* ties. This supports the findings of Hom and Xiao's (2011) study on the effect of *Guanxi* on employee-retention and loyalty. Ballantyne (2003) also emphasized the importance of knowledge-generation within the internal networks of self-managing, problem-solving groups of employees collaborating in firm-based projects. Interactions within these networks of relationships allow the emergent value to be created and shared (Ballantyne et al., 2003). Conquering with these perspectives, the four business owners in our sample agreed that their talented employees are their core resources to deliver value.

In the existent literature, building a relationship with clients has been found to have a positive effect on the growth and competitiveness of firms through increased customer satisfaction, retention, and loyalty leading to repeated business and increased firms' profitability (Anderson et al., 1994; Hitt et al., 2001; Kumar et al., 2013). In our sample, apart from Zhang L, who builds relationships with clients similarly to the Western approach to RM, the other three respondents attract and maintain relationships through traditional *Guanxi*. However, actors in the client markets of Du B and Zhang L are less prominent and the owners have fewer ties than Ding and Sen. Sen has the advantage of accessing the exclusive market of a local state-owned enterprise, consisting of a variety of diversified subordinate firms, while Ding's clients form a triad-like group in his network. The high connectivity of stakeholders within the clients' markets of Ding and Sen indicates that the two firms are pursuing exclusive business dealings within a tight web of loyal clients.

Referral markets can play a crucial role in the creation of relationships between an SME construction firm and its clients (File et al., 1992; Payne et al., 1999). In our sample, referrals were found to be prominent in the value-adding stakeholder networks of our four business owners. In the cases of Du B, Sen, and Ding, referral markets formed clique-like components (fully connected groups) of personal friends who provide the entrepreneurs with critical word-of-mouth endorsements. In the cases of Sen and Du B, the authority and referral markets completely overlapped, which indicates that their referrals are primarily orchestrated through friendships with local officials. The well-connected characteristics of stakeholders in referral markets indicate the importance of the collective monitoring and promotion of the entrepreneur's business by his close-net acquaintances.

Managing relationships with financing markets as part of the firm's diverse influence markets is important for a firm's stability and growth, particularly for those producing infrastructural products and services (Gummesson, 2002). Through financial feedback, firms should be able to communicate with investors, such as shareholders and financial institutions, their ability to co-create value in return for investors' capital investment and trust (Frow and Payne, 2011). However, MacGregor and Campbell (2006) have noted that firms are often very poor in developing such value propositions. An examination of our sample shows that the actors in the financing markets are less prominent and connected in all four cases. Moreover, it seems that interior-finish services require less financing resources than construction contractors, as Firm 2 (Ding) lacked any value-adding relationships within this market.

Authority markets and relations with government officials are important to a firm's growth and survival in China (Peng and Luo, 2000). Government officials are often the orchestrators of the institutional base guiding a firm's behaviour and the guardians to its compliance with economic and environmental policies and regulations (Hillman, Zardkoohi, and Bierman, 1999). In China, the ability and power of government officials to control and allocate vital resources, e.g. land, funds, and licences, increases dramatically due to the poor legal systems and regulatory policies (Peng and Luo, 2000). Political ties can thus contribute to resource capability-building of firms (Chen and Wu, 2011) and business owners often proactively seek to cultivate *Guanxi* ties with government officials to benefit from the associated resource-related advantages, such as the provision of financial resources, privileged business dealings, and swift government approvals (Park and Luo, 2001; Hsu et al., 2012). In our sample, comparing Du B and Sen (the established firms) with Zhang L and Ding (the start-ups) the latter have fewer government officials' contacts related to their business. The networks of Du B and Sen clearly show that political ties play important roles in their daily operation. The business owners' backgrounds as officials and employees of state-owned firms have given them the prestige to fully capitalize on their relationships in terms of referrals to public clients. Ding and Zhang L have few political ties in their ego networks. This may be the result of the different business activities that have led to interior-finish services with less demand from the public sector. In addition, neither Ding nor Zhang L had work experience in government or strong ties with powerful officials. The requirement for the growth of their business may not be in having political ties, but to cultivate business ties with suppliers (to reduce costs), with clients (to gain repeat business), and with referrals (to attract new projects). Indeed, although political ties are regarded as an appropriate means to maintain legitimacy in the transit economy of China (Carlisle and Flynn, 2005), Luo (2008) argued that the extent of intertwinement of *Guanxi* and corruption might be strengthened in a demoralized environment. It is believed that when the regulatory system and market mechanisms become mature, businessmen in China may benefit less through political ties (Tan et al., 2009; Shou et al., 2011; Shou et al., 2014), but may benefit more by having business ties in their networks (Hsu et al., 2012). Our findings may signal such a cultural shift among young Chinese entrepreneurs.

The Supplier markets and the importance of relationships with suppliers have been afforded a great deal of interest by RM scholars (Hunt and Morgan, 1994; Eggert and Ulaga, 2010; Prior, 2012). A study by Chen and Wu (2011) has shown that *Guanxi* relationships with suppliers can enhance a firm's resource-building and adaptive capabilities through preferential channel treatment and reliability in supply. The construction industry worldwide, however, is plagued by high fragmentation, adversarial relationships, and a limited involvement of suppliers at the early stages of projects (Bresnen and Marshall, 2000). A large and growing number of studies in construction have called for a radical change in supply-chain relationships and the building of more stable, integrated, and collaborative supply chains in construction (Akintoye et al., 2000; Holti et al., 2000; Cox and Ireland, 2002). The formation of strategic partnerships and collaborative agreements between supply-chain actors is seen to result in increased competitiveness through the creation and delivery of superior-value propositions for construction-industry clients, ultimately ensuring "customer delight" (Latham Report, 1994; Egan Report, 1998; Briscoe and Dainty, 2005). There is no indication, however, of a move towards such collaborative approaches in our sample. In fact, arm's-length relationships are prevalent with almost all transactional ties appearing in the supplier markets of the four case studies, representing a minor percentage of the total ties directly linked to each ego. Actors in supplier markets have fewer ties to other alters. These arm's-length transactions, although increasing transaction costs, may protect the owners from the erosive effect of *Guanxi*, such as by myopic views and biased information, the cost of safeguarding *mianzi*, and the risk of redundancy (Li and Sheng, 2011; Wong and Chan, 1999). The findings of our sample also support the hypothesis of Styles and Amble (2003) that both transaction and RM coexist rather than conflict in the Chinese market.

5. Conclusion

Drawing upon social-network theory, this study has set out to illuminate the ancient concept of *Guanxi,* the Chinese approach to RM, by examining construction SMEs through the lens of SNA. Adopting an egocentric perspective, the structural and relational characteristics of value-adding ego networks of the business owners in four Chinese construction SMEs were examined. Adopting Payne et al.'s (2005) 'six markets' model, the relationship between the business owner and six main stakeholder groups was identified, quantified, analyzed, and visualized using SNA. Relationships were measured according to the frequency of communication, the value of favour exchanges, and the amount of emotional investment in the relationship. Comparative SNA studies were conducted, focusing on ego-network density, tie strength, and prominence of key stakeholders. The findings highlighted the high degree of structural and relational embeddedness in Chinese SMEs with *Guanxi* ties (both strong and weak) dominating the construction business-owners' network. They also underlined the prominence of the internal markets of multiskilled employees and business-development managers. Transactional ties, albeit a minority, also exist in the business-owners' network, which confirms that both relational and transactional marketing coexist in the Chinese construction industry.

5.1 Contributions

The qualitative and inductive research approach adopted clearly limits the generalizability of the findings. However, a number of wider inferences can be drawn from the study's observations. These should rest as hypotheses until supported or refuted by further quantitative evidence.

This study makes noteworthy contributions to the field of RM from four distinct aspects. First, few attempts have been made to understand the structure of relationships involved in *Guanxi* marketing (Su et al., 2007; Peng and Luo, 2000). In fact, this study is the first to offer an egocentric view of *Guanxi* as a web of value-adding relationships upon which a Chinese SME business owner (ego) is embedded. The power of the network approach adopted rests in its ability to provide a structural view of the relationship surrounding an entrepreneur, thus offering a unique and arguably more complete world view of RM. Our findings also refined the 'six markets' model by analyzing inter-group relationships across the six stakeholder markets, as opposed to the disconnected view in previous studies (Christopher et al., 2002; Ballantyne et al., 2003) enabling the integration of RM across and between the key stakeholder groups (Payne et al., 2005). Disaggregating the *Guanxi* network into six distinct groups of stakeholder markets and visualizing inter-group relationships using SNA have shown that these markets are not isolated. Indeed, *Guanxi* ties across these six stakeholder markets are well connected, cocreating, and jointly contributing to the survival of the firms. The measure of density was proposed as a proxy for the structural embeddedness of these networks and the findings support a contingency view of *Guanxi* by showing that network density is context-specific. In fact, no correlation was found between the age of the firms and the network density of the SMEs' business owners. Density may be contingent on other factors, such as, for example, the business strategy and risk-orientation.

Secondly, attending to Hoang and Antoncic (2003) calls for greater precision of tie-content measures in network-based research in entrepreneurship. We have elicited data on ties that have a direct influence on the value-adding activities of the firm. This enabled the mapping of network ties that are more closely linked to business outcomes, such as a firm's survival. In addition, adopting social-capital theory, we developed a unique measure of tie strength in which relationships were measured according to the frequency of communication, the value of favour exchanges, and the amount of emotional investment in the relationship (Granovetter, 1973; Wong and Leung, 2001; Mavondo and Rodrigo, 2001; Wang, 2007; Yen et al, 2011; Homans, 2013). The developed tie strength measure has extended existing RM literature by providing intricate detailing of the 'multiplexity' of *Guanxi* value-adding relationships. In network parlance, 'multiplexity' refers to the layering of different types of exchange within the same relationship. The findings have shown that *Guanxi* value-adding relationships are multiplex, involving frequent communication, emotional bonding, and reciprocal services. Furthermore, providing an empirical extension to Su et al.'s (2007) hierarchical conceptualization of *Guanxi*, our findings have shown that *Guanxi* ties are not at all similar; in fact, they vary considerably in terms of both their strength and importance. In our sample, the findings highlighted the high degree of relational embeddedness in Chinese SMEs with *Guanxi* ties (both strong and weak) dominating the construction business-owners' network. Transactional ties, albeit a minority, also exist in the business-owners' network, which confirms the coexistence of relational and transactional marketing in the Chinese business environment (Styles and Amber, 2003).

Thirdly, the study also introduced and provided a quantitative measurement to the concept of the 'prominence' of stakeholder markets in RM, identifying the most important value-adding relationships to an entrepreneurial business owner. We have proposed that degree centrality values for given actors within the stakeholder ego networks provided quantitative prominence data, as well as accessible visualizations representing their importance. In our sample, the prominent actors in most business owners' value-adding ego networks reside in the internal market, typically the multiskilled employees and business-development managers, signalling the importance of employee-retention and loyalty to entrepreneurial business in China.

Finally, the measures of network density, tie strength, and actor centrality were proposed as the appropriate SNA measures for the comparative study of the *Guanxi* networks. These measures were used to build a terminology and a database of relative values by which other SME business owners might be analyzed. The proposition provided an outline of a social-network theory of *Guanxi* RM.

5.2 Managerial contribution

The research has implications for practitioners and SME business owners, not only in China, but also inclusive of other settings around the world. In particular, we have reported an innovative application of Payne et al.'s (2005) six-markets stakeholders model by visualizing inter-market relationships through SNA. We propose the combination of SNA and the six-markets model as a diagnostic marketing tool for entrepreneurial business. The tool will allow a systemic approach to strategy-making with SNA providing a structure whereby the entrepreneur may undertake a structured review on how the firm connects to its different stakeholder groups. This will allow greater transparency in understanding stakeholder relationships, revealing prominent stakeholders and supporting the development of network-based strategies to improve relationships with stakeholders and to facilitate strategic value choices. The approach is useful as it will enable business owners to view their stakeholder relationships from a collaborative co-creative and co-influencing perspective and to integrate management of relationships across and between key stakeholder groups. A 'balance' can thus be reached in the value co-created and shared by members of the marketing network (Payne et al., 2005). The development of such business-network 'insight' (Mouzas et al., 2008) will support the mobilization of network actors and the creation of the competitive advantage necessary for the firm's innovation and growth.

Altogether, the evidence of this research indicates the importance of *Guanxi* for both start-up and established private-business owners. Although the external environment such as globalization may Westernize the approach of the Chinese to business, *Guanxi* is a dynamic concept that can evolve and continue in Chinese society. Thus, managers entering the Chinese market should actively seek to cultivate *Guanxi* across the six stakeholder markets. This could be achieved through pursuing three strategies: (1) frequent communication and engagement, (2) the exchange of favours such as gift-giving, visiting, and participating in each other's events, and (3) emotional investment, e.g. through empathy, mindfulness, and reciprocity. The internal markets are particularly important and managers should strive to build *Guanxi* with their Chinese employees to ensure their loyalty and continuous commitment to the firm. However, it should be noted that, as a business strategy, considering *Guanxi* as a 'back-door' policy to twist the rules of business may have negative consequences (Fan et al., 2002) and firms are encouraged to view *Guanxi* mainly as a relational lubricant that can accelerate the flow of business within legal boundaries (Dunfee and Warren, 2001; Chen, 2001).

5.3. Limitations and further research

A number of important limitations need to be considered. First, the SNA data collected is cross-sectional and retrospective, as it represented the business owners' relationships at a specific point in time, the point when the interviews were conducted. It thus cannot present the dynamic development of a social network over time. This requires a longitudinal study in which the business owners' relationships are captured progressively at different stages.

Secondly, the recruitment markets were excluded from this study due to our focus on existing value-adding connections rather than potential relationships. However, given the prominence of the internal markets identified in the study, we recommend that future studies should explore the recruitment markets, particularly as important relationships to entice the best employees into the organization, whose knowledge and capabilities are most important to the creation and delivery of client value.

Thirdly, the study was not specifically designed to evaluate factors related to the firms' performance. Due to the lack of financial reports of the sample firms, the success of the business cannot be assessed. Therefore, with the availability of such data, future research can examine aspects such as the relationships between the social structure of business owners and their business performance or strategy. The association between the structural characteristics of the business owner's *Guanxi* network and their business performance is an intriguing question which could be usefully explored in further research.

Finally, the operationalization of tie strength developed as part of this study can serve as a basis for future studies and the SNA methodology used may be applied to other contexts elsewhere in the world. Indeed, the concept of social networks providing opportunities and commitments are found in other cultures, e.g. Brazilian *Jeitinho*, *Nepotism* in the USA, *Wasta* in the Middle East, and *Pulling strings* in the UK (Smith et al., 2012). While these concepts share a common emphasis on the importance of nurturing 'informal networks' to get things done quickly and efficiently, "they differ in their relative emphasis on the intensity, duration, and hierarchical nature of the relationship between the parties" (Smith et al., 2012, p. 138). A comparative study using SNA would make a valuable contribution to network-based research in entrepreneurship across diverse cultural settings.

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Table 1: Basic SNA Concepts

Concept	Definition
Actors	The social entities liked together according to some relation.
Alters	The actors to whom an ego is tied.
Centrality	A family of measures characterizing the prominence of an actor in the social network. Central actors are those that are extensively involved in relationships with other actors.
Cliques	A fully connected group or network.
Density	A measure of the proportion of all possible ties that are actually present in the network and is an indicator of ‘cohesion’ and ‘connectivity’ and the speed at which information diffuses in the social network.
Dyad	Consists of a pair of actors and the relations between them. The dyad is frequently the basic unit for the statistical analysis of social networks.
Ego	The focal actor of interest.
Ego-network	Social network of a particularly focal actor, ego, ego’s alters, and the ties linking ego to alters and alters to alters.
Relation	A specified set of ties among a set of actors, e.g. friendship, family, etc.
Social Network	A set of relations that applies to a set of social entities and any additional information on those actors and relations.
Tie	What connects A to B, e.g. A is friend with B = A is tied to B.
Triad	A subset of three actors and the relations among them.

Source: Wasserman and Faust (1994), Hanneman and Riddle (2005); Prell (2012)

Table 2: Research sample

Firm (Business owner/respondent)	Specialization	Number of employees	Year of operation	Type of activities	Type of project
Firm 1 (Zhang L)	Interior finish	8	5	Interior finish	Private residences
Firm 2 (Ding)	Interior finish	5	4	Interior finish	Private residences, property-development, and public-sector projects such as schools.
Firm 3 (Du B)	Specialist construction	50	11	Contracting and Subcontracting	Private- and public-sector projects
Firm 4 (Sen)	Refurbishment and construction	50	12	Contracting and Subcontracting	Public-sector projects

Table 3: SNA egocentric questionnaire

1) Can you list all individuals who you believe are important, i.e. add value, to your business, focusing on the past 12-month period?		2) What is the type of relationship between you and this individual?		Tie strength 3) How often are you in contact with this individual?	4) What is the value of favour exchanges in this relationship?	5) What is the amount of emotional investment in this relationship?	6) To the best of your knowledge, how is this individual connected to the other individuals on this list?
ID	Name	Business	Personal	Rarely (communication with this person has not happened in the past month)= 1 Occasionally (communication with this person has happened only a few times (1-2) in the past month)= 2 Frequently (communication with this person has happened often (3 or more) times in the past month)= 3	None = 0 Low = 1 Medium = 2 High = 3	None = 0 Low = 1 Medium = 2 High = 3	

Table 4: Qualitative interview elements

1. Which of the following markets do you believe are most important to your business? Please rank the six markets (subgroups) according to their importance and provide the rationale behind this ranking:

- Client markets
- Referral markets (any player who can introduce projects)
- Financing markets (investors, bondholders and bankers)
- Authority markets (officials)
- Supplier markets
- Internal markets

2. With the development of your business, have you observed any change in the importance of certain stakeholders, and why?

3. To what extent do you perceive Guanxi affects (positively and negatively) your firm performance? Is there any change with the development of your business?

Table 5: Adapted 'six-markets' model

Original Model (Payne et al., 2005)	Adapted Model
Customer Markets Buyers (e.g. a wholesaler), intermediaries and final consumers	Client markets
Referral Markets Customer and non-customer referral sources	Referral markets (any player who can introduce projects)
Influencer Markets Financial and investor groups, unions, industry bodies, regulatory bodies, business press and media, user and evaluator groups, environmental groups, political and government agencies, and competitors.	Financing markets (investors, bondholders, and bankers) Authority markets (officials)
Recruitment Markets All potential employees together with the third parties that serve as access channels	Not included.
Supplier and Markets Strategic suppliers, key suppliers, approved suppliers, and nominated suppliers	Supplier markets
Internal Markets A firm's Employees	Internal markets

Table 6: Main findings of the case studies

Main findings	Firm 1 (Zhang L)	Firm 2 (Ding)	Firm 3 (Du B)	Firm 4 (Sen)
Density (Structural embeddedness)[1]	0.887	0.492	0.533	0.809
Tie strength[2] (number of strong/weak/transactional ties)	11/9/1	9/12/4	26/6/3	27/4/2
Relational embeddedness[3] (percentage strong/weak/transactional ties)	Dominance of strong ties (52.4%) as opposed to weak (42.8%) and transactional (4.8%)	Dominance of weak ties (48%) as opposed to strong (36%) and transactional (16%)	Dominance of strong ties (74.3%) as opposed to weak (17.2%) and Transactional (8.5%)	Dominance of strong ties (82%) as opposed to weak (12%) and Transactional (6%)
Prominent markets[4] (Highest degree centrality)	Internal	Referral and Internal	Internal	Internal
Prominent Markets from business owners' view	Internal	Client	Internal and Authority	Client and Authority
Approach to Client Markets	*Guanxi* and Transactional	*Guanxi*	*Guanxi*	*Guanxi*
Approach to Referral Markets	*Guanxi*	*Guanxi*	*Guanxi*	*Guanxi*
Approach to Financing Market	*Guanxi*	*N/A*	*Guanxi*	*Guanxi*
Approach to Authority Markets	*Guanxi*	*Guanxi*	*Guanxi*	*Guanxi*
Approach to Supplier Markets	*Guanxi* and Transactional	*Guanxi* and Transactional	*Guanxi* and Transactional	*Guanxi* and Transactional
Approach to Internal Markets	*Guanxi*	*Guanxi*	*Guanxi*	*Guanxi*

Definitions:

[1]Structural embeddedness is represented by network density and is measured as the percentage of all possible ties that are actually present excluding the ego.

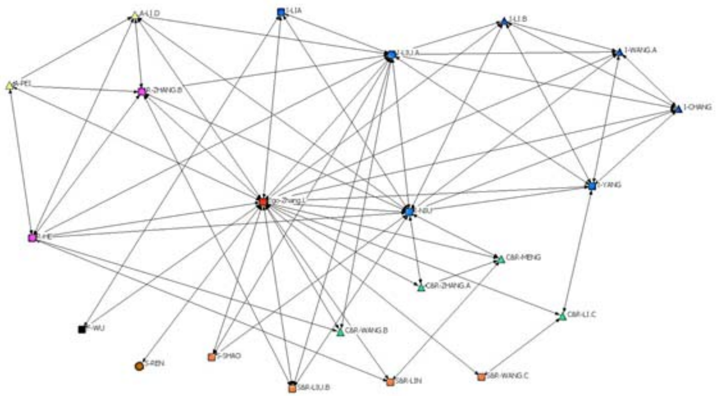
[2]Tie strength is measured as the sum of the frequency of communication, amount of favour exchanges, and the value of emotional investment in the relationship.

[3]Relational embeddedness is the notion that some relations are embedded in others and is indicated by a comparison between the number of strong, weak, and transactional ties in ego's network.

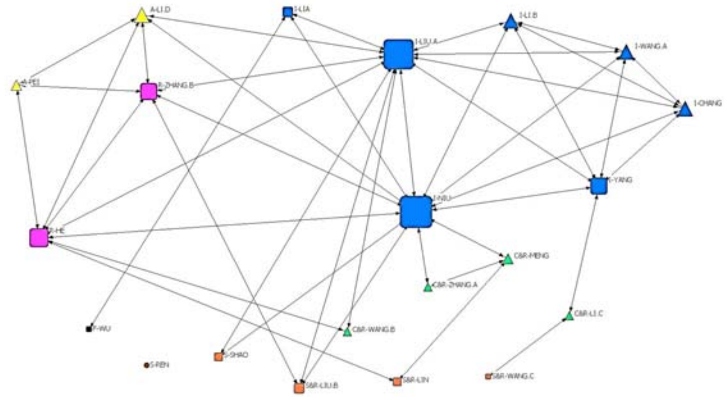
[4]Prominence is represented by degree centrality which measures how connected an actor is within a social group and is calculated by simply counting the number of connections an actor has.

Figure 1: Stakeholder networks of the two Start-up firms

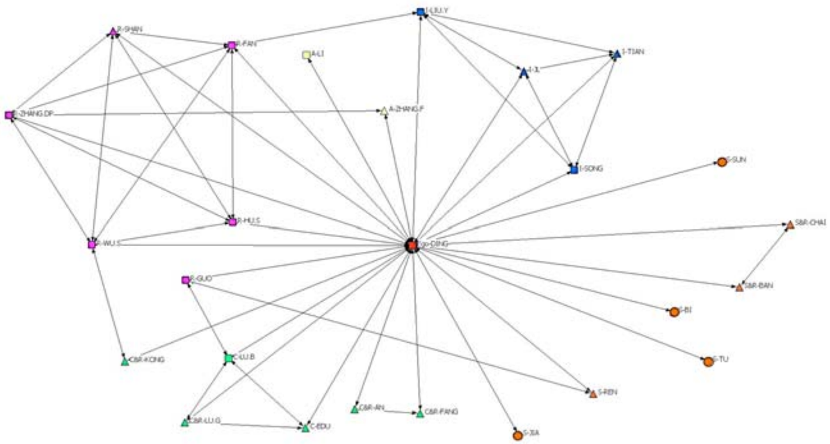
Node abbreviated identity: C: Client Markets (Green), R: Referral Markets (Purple), F: Financing Markets (Black), A: Authority Markets (Yellow), S: Supplier Markets (Orange) and I: Internal Markets (Blue). Nodes are shaped according to tie strength: Square: Strong tie; Triangle: Weak tie; and Circle: Transactional tie



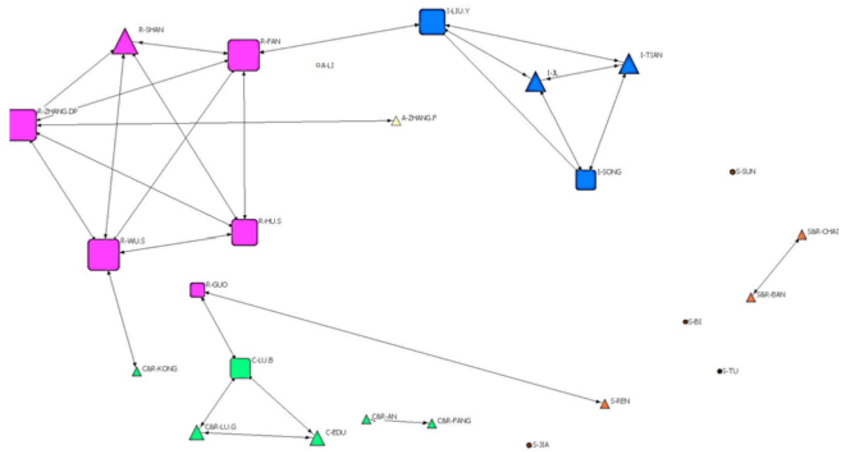
Firm 1 (Zhang L) value-adding ego network



Firm 1 (Zhang L) value-adding ego network omitting ego (nodes sized according to degree centrality)



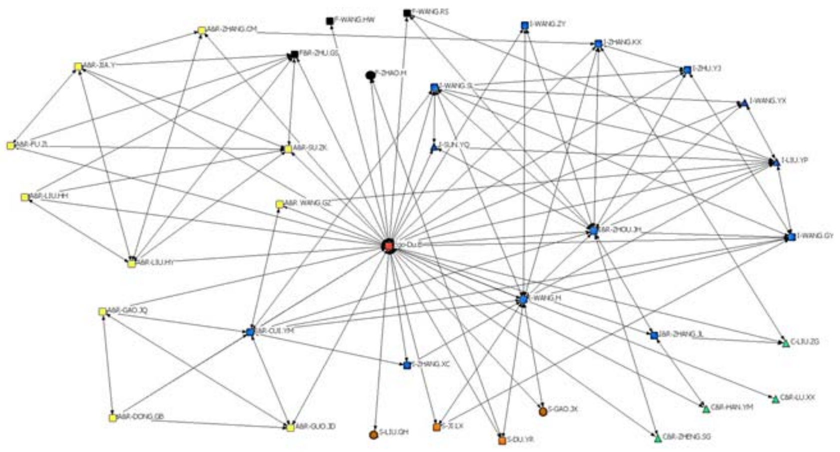
Firm 2 (Ding) value-adding ego network



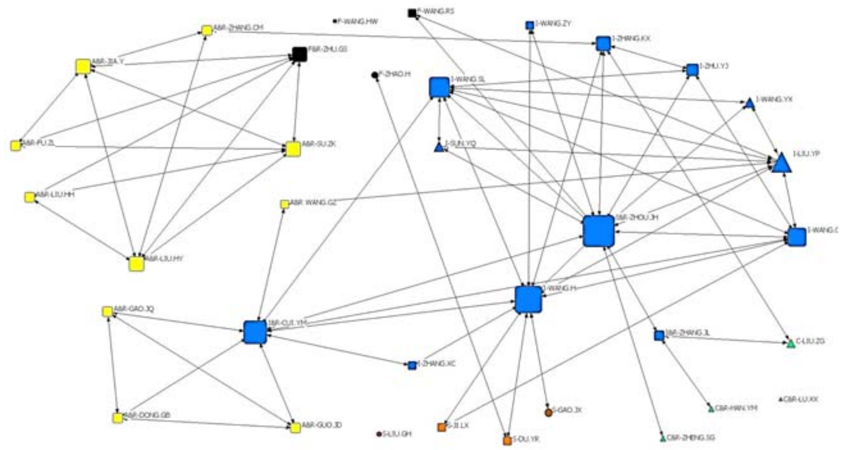
Firm 2 (Ding) value-adding ego network omitting ego (nodes sized according to degree centrality)

Figure 2: Stakeholder networks of the two established firms

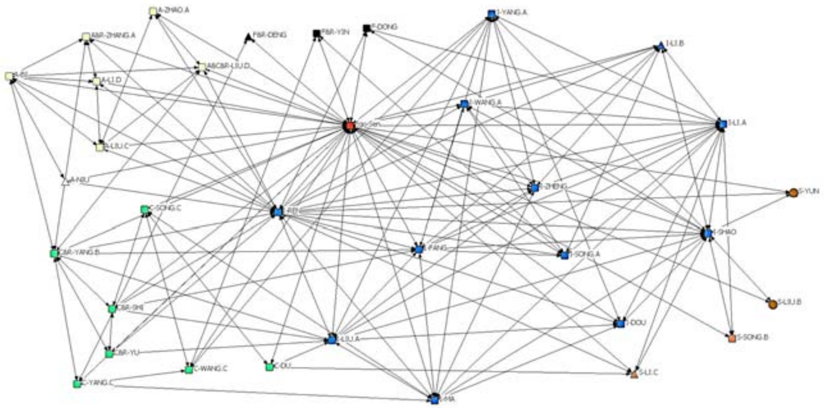
Node abbreviated identity: C: Client Markets (Green), R: Referral Markets (Purple), F: Financing Markets (Black), A: Authority Markets (Yellow), S: Supplier Markets (Orange) and I: Internal Markets (Blue). Nodes are shaped according to tie strength: Square: Strong tie; Triangle: Weak tie; and Circle: Transactional tie.



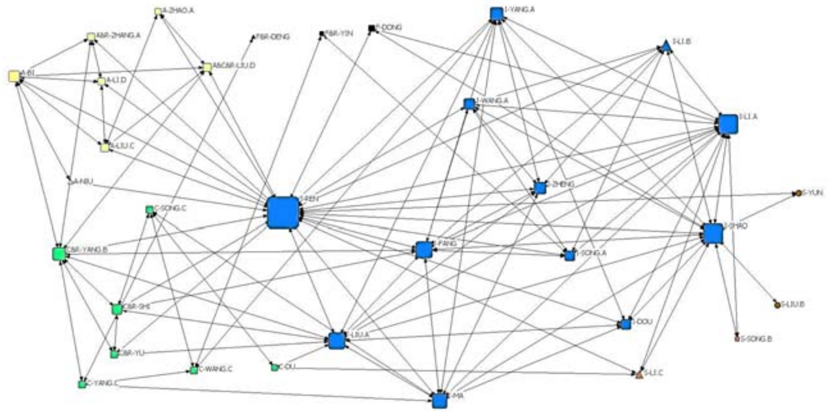
Firm 3 (Du. B) value-adding ego network



Firm 3 (Du. B) value-adding ego network omitting ego (nodes sized according to degree centrality)



Firm 4 (Sen) value-adding ego network



Firm 4 (Sen) value-adding ego network omitting ego (nodes sized according to degree centrality)