

## The Mediating Role of a Strategic Alliance of Information and Organizational Social Capital on the Social Networks-Organizational Performance Relationship: Evidence from Chinese Listed Firms

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### Abstract

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Previous Chinese social network studies have paid less attention to how managers use social networks as an alliance of social capital to achieve their organizational goals, and have neglected to examine strategic alliances of resources as the cognitive dimension of social capital as a mediator in the social networks-organizational performance relationship. Based on social capital theory, this study examined the relationship between an alliance of social capital in terms of the tie strength of social networks (business, government, and employee ties) and organizational performance, and the mediating effect of a strategic alliance of information and organizational social capital in such a relationship. Data were collected through a survey of 300 Chinese listed firms. Results indicate that the strategic alliance of information and organizational social capital plays a mediating role in the positive relationship between the alliance of social capital in terms of the tie strength of the three types of social networks and organizational performance. This study contributes to our understanding of how managers use and manage social networks as an alliance of social capital and the strategic alliance of information and organizational social capital as the cognitive dimension of social capital, to achieve the firm's profit and growth goals.

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**Keywords:** Social networks, A strategic alliance of information and organizational social capital, Organizational performance, China

### 1. Introduction

“Social networks” are defined as a set of social relationships in terms of a web of personal ties for the aim of personal and organizational actions (Burt, 1992; Granovetter, 1985). The debate on whether social networks benefit organizations is almost 30 years old. In the literature pertaining to social networks, previous studies have examined the relationship between social networks and organizational performance, but their findings are diverging and inconsistent. Some empirical studies have found that social networks as social capital positively affect organizational performance (Gelekanycz & Hambrick, 1997; Hu & Stanton, 2011; Luo & Chen, 1997; Peng & Luo, 2000; Park & Luo, 2001; Zaheer & Bell, 2005), while others reported the exact opposite (Ma, 2010; Nie *et al.*, 2011; Uzzi, 1999). Many studies have examined how social networks influence organizational performance in the Chinese context, but very few have examined how Chinese firms use social networks to acquire resources such as access to information and how these resource acquisitions impact on organizational performance. The majority of the previous studies, such as that by Peng & Luo (2000), have contributed to examining the direct effect of social networks on organizational performance. Moreover, Chinese social network (Guanxi) empirical studies have also contributed to the important influence of individual-level Guanxi (the focal firm's manager's ties with executives of other organizations) on organizational performance at the organizational level by using a quantitative approach (Hu & Stanton, 2011; Luo *et al.*, 2012; Luo & Chen, 1997; Park & Luo, 2001; Peng & Luo, 2000; Xin & Pearce, 1996). These Guanxi studies claim that Guanxi at an individual level can be transferred at the organizational level when a personal relationship is used by the organization via a strong connection among its managers.

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However, previous studies, including these studies, have not examined how Guanxi at the individual level is transferred to organizational performance (at the organizational level) (Zhang & Zhang, 2006). Additionally, most Chinese social network studies have neglected the mediating mechanism in the social networks-organizational performance relationship. A few scholars (such as Wang *et al.*, 2011; Yli-Renko *et al.*, 2001) have argued that social networks cannot directly influence organizational performance, as they do so through some intermediate stages such as resource acquisition.

Scholars argue that the focal firm can gain competitive advantage from its alliance partners within social networks if its alliance partners can offer valuable resources (such as information) to the focal firm, but whether they wish to endow resources depends upon the voluntary agreement between the focal firm and its alliance partners, as well as the choice of alliance partners (Casanueva *et al.*, 2013; Lavie, 2006). Not all alliance partners will be willing to provide resources to the focal firm. Chinese social network studies (e.g. Chen & Wu, 2011; Wang *et al.*, 2011) state that managers use the close tie of Guanxi personal relationships with their business partners or government officials to acquire valuable resources, which has a positive effect on firm performance. But they have paid less attention to the choice of alliance partners and whether these alliance partners (such as customers, suppliers, and government officials) will be willing to offer valuable resources (such as information, knowledge, technology, and financial resources) to the focal firm. They have neglected to examine whether and how managers use Chinese social networks (Guanxi) at the individual level to achieve organizational goals. In other words, managers might use Guanxi at the individual level to reach their personal goals or short-term goals (Gu *et al.*, 2008; Nie *et al.*, 2011), and as a result, Guanxi may lead to corruption and have a negative effect on firm performance (Nie *et al.*, 2011).

In order to address these gaps, the purpose of this study is to focus on the strategic alliance of information and organizational social capital as a set of mediators, and examine how the tie strength of three types of social networks, i.e. business ties (those ties between the top managers in the focal firm and its customers and suppliers), government ties (those that bind the top managers in the focal firm and government officials), and employee ties (those ties between the top managers in the focal firm and its employees) as an alliance of social capital for the firm, affect organizational performance. The unit of study is individual managers in Chinese listed firms in terms of how they use the three types of social networks as an alliance of social capital for the firm via a strategic alliance of information and organizational social capital to achieve organizational goals. The individual level of analysis can inform the understanding of the relationship between social networks and organizational performance based on social capital theory. Social capital theorists (Granovetter, 1973; Nahapiet & Ghoshal, 1998; Tsai & Ghoshal, 1998) hold that social networks as a set of social relationships are an alliance of social capitals that provides a set of strategic resources that actors can access and use to achieve their goals. This strategic resource dimension of social capital represents three dimensions of social capital (i.e. the structural, relational, and cognitive dimensions) (Nahapiet & Ghoshal, 1998). The existing social network literature shows that strong ties within social networks as social capital can help a focal firm gain access to valuable resources such as information (Burt, 1992, 2000; Granovetter, 1973), and organizational social capital (Gabbay & Leenders, 1999), which will have positive effects on organizational performance (Harrington, 2001; Wang *et al.*, 2011). The present study used a survey to investigate how general managers in Chinese listed firms use the three types of social networks as an alliance of social capital for the firm to achieve its profit and growth objectives via a strategic alliance of information and organizational social capital. These top managers have the power to determine their firms' financial and strategic objectives and the resources they obtain from their alliance partners can be used to achieve the organization's financial and strategic objectives. For example, they may use close or strong ties with key business partners, government officials and employees as an alliance of social capital to acquire and manage resources to achieve their financial and strategic goals.

In line with the existing literature (e.g. Gulati, & Singh, 1998; Koka & Prescott, 2002), the term “ a strategic alliance of information and organizational social capital ” is generally defined as a voluntary cooperation and coordination agreement between the focal firm and its alliance partners in regard to sharing and exchanging strategic resources including partners of information, knowledge, capital, technology, and firm-specific assets. Based on social capital theory, this term is the cognitive dimension of social capital, as this agreement can enable the focal firm and its alliance partners to achieve collective action such as the exchange of information and technology (Casanueva *et al.*, 2013).

Based on a strategic dimension of social capital theory, a structural equation model was developed and tested to examine the mediating effect of a strategic alliance of information and organizational social capital in the relationship between an alliance of social capital, in terms of the tie strength of the three types of social networks, and organizational performance. This model was tested using data collected from a sample of 300 Chinese listed companies. This study makes theoretical contributions in the following ways.

First, this study sheds lights on how managers in the focal firm use the three types of social networks as an alliance of social capital for the firm to achieve its profit and growth goals. This study provides evidence that top managers in the focal firm select the right alliance partners, such as key business partners, government officials or employees, and maintain strong and close relationships with them within a social network to obtain and use strategic resources, which has a positive effect on organizational performance. The finding shows that the choice of alliance partners and having strong and close ties with them is significant for actors to obtain and use strategic resources to achieve their goals. This finding is consistent with the argument that the right alliance partners can help the focal firm to achieve its competitive goals if they provide valuable resources (Casanueva et al., 2013; Lavie, 2006). Prior Chinese social network studies have not focused on social networks as alliances of social capital for the firm in order to examine the relationship between social networks and organizational performance.

Second, this study contributes to our understanding of how a strategic alliance of information and organizational social capital can play a mediating role in the relationship between an alliance of social capital, in terms of the tie strength of the three types of Chinese social networks, and organizational performance. This study posits that the strategic alliance of information and organizational social capital is the cognitive dimension of social capital, which enables the focal firm's alliance partners (such as business partners and government officials) to offer strategic resources to the focal firm to improve its performance. Moreover, this can help the focal firm and its alliance partners to share and exchange information, knowledge, technology, and other specific assets to achieve their collect goals, as the focal firm and its business partners and employees, and government officials, might have different goals (Chen & Wu, 2011). The sharing and exchange of information, knowledge, and technology enables employees to cooperate with each other and coordinate their actions to work together to benefit the focal firm (Taylor, 2006). Previous social network studies have neglected to examine this set of mediators as the cognitive dimension of social capital for such a relationship.

On the other hand, this cognitive dimension of social capital can shed light on whether Chinese social networks (Guanxi) can benefit organizations. Previous Guanxi studies (e.g. Gu et al., 2008; Nie *et al.*, 2011) argue that Guanxi has potential negative effects on firm performance including executives' indebtedness and their self-interest goals. This study provides evidence to explain why Chinese social networks at an individual level can benefit organizations, i.e. the evidence shows that managers in the focal firm put organizational goals or group goals before their individual goals and focus on the long-term performance rather than resources flow, which has a positive effect on organizational performance. Resources are scarce and Chinese government officials hold varying powers in terms of allocating and distributing valuable resources, such as land and finance, to different firms in different industries. In these situations, senior managers have to use Guanxi to acquire resources such as information to achieve their goals. However, managers might have self-interest goals and the individual goals of Chinese government officials are linked to developing their political careers (Sheng et al., 2011). If managers do not place their organizational goal before their self-interest goals in using Guanxi, then the acquired resources such as bank loans will become non-performance loans, and this might result in negative effects on organizational performance. Therefore, this also explains why Guanxi has no benefit for organizations.

The remainder of this study is organized as follows. The second section provides a review of the literature and develops the hypotheses based on social capital theory. The third section presents the methods. The fourth section reports the findings. The fifth section discusses the findings related to the existing literature, draws conclusions and discusses the contributions to knowledge. The sixth section provides theoretical and practical implications. Finally, it points out the limitations and future research directions.

## 2. Literature review and hypotheses

### *Social networks as a strategic resource of social capital*

The “ties” in a social network structure represent social relationships between each focal ego (i.e., a focal individual actor, such as a firm or a person) and the alters (such as internal and external stakeholders) in terms of social ties with their specific contents such as an exchange favour (such as resources) (Adler & Kwon, 2002; Kadushin, 2012; Zhou et al., 2007). Social ties as social networks have been categorized into business, government, and employee ties in the extant social network studies. Business ties refer to ties between managers in the focal firm and others (such as business partners) (Chen & Wu, 2011; Park & Luo, 2001; Sheng *et al.*, 2011). Government ties refer to connections between managers of the focal firm and government officials (Chen & Wu, 2011; Gu *et al.*, 2008). Employee ties refer to ties between managers in the focal firm and its employees (Atuahene-Gima & Murray, 2007). In this study, the three types of social networks (business, government, and employee ties) are considered as alliances of relationships within a social network, i.e., the focal firm (the ego) forms alliances with its business partners (customers and suppliers), government officials, and employees. Tie strength is a characteristic of social networks (Granovetter, 1973; Wasserman & Faust, 1994). It represents the strength of relationship between the two parties. There can be strong or weak ties (Brass *et al.*, 1998) depending on the intensity, frequency of interaction, reciprocity, and intimacy of the relationship (Granovetter, 1973). Strong ties refer to frequency of interaction, reciprocity, and intimacy in the alliance relationship (*ibid.*). Weak ties refer to infrequent interactions, limited reciprocity, and low intimacy in the alliance relationship (*ibid.*).

It has been argued that “social networks” are strategic resources of social capital for a firm, i.e., they can be considered an alliance of multidimensional social capital, including network resources, members, and the quality of the relationships (Nahapiet & Ghoshal, 1998; Tsai & Ghoshal, 1998). Scholars propose the structure of an ego social network, whereby the characteristics (such as the tie strength) of the ego social network represent resources for the focal firm (Gulati et al., 2000; Lavie, 2006, 2008). The focal firm can obtain competitive advantage from its alliance partners within social networks if its partners endow it with resources (Lavie, 2006). In this context, Chinese managers in the focal firm may use Guanxi to establish an alliance relationship with their business partners, government officials, and employees to facilitate information inflow and knowledge exchange, and obtain advanced technology from their suppliers, to achieve their long-term strategic goals.

Social networks as a strategic resource dimension of social capital can be linked to a multidimensional social capital alliance. Social capital theorists (such as Gabbay & Leenders, 1999; Nahapiet & Ghoshal, 1998; Putnam, 1993, 1995) consider social networks as social capital that generates resources that actors can acquire and use to achieve their goals. In other words, social capital is defined as a set of actual and potential resources embedded within social networks possessed by actors for the purpose of their actions (Nahapiet & Ghoshal, 1998: 243). This definition delineates a multi-dimensional social capital alliance for a firm —structural, relational, and cognitive dimensions of social capital in a managerial context. The structural dimension of social capital is the structure of the social network including characteristics such as tie strength (Nahapiet & Ghoshal, 1998). The relational dimension of social capital refers to the various qualities of the personal relationships in the social network structure (Putnam, 1993, 1995). The cognitive dimension of social capital refers to all of the common aspects (such as codes, languages, and norms) shared within a network (Tsai & Ghoshal, 1998), it reflects as a public asset (Casnueval et al., 2013), such as organizational social capital. The strategic alliance of information and organizational social capital can be identified as the cognitive dimension of social capital because all of the members within a social network are able to share and exchange information, knowledge, technology, and other specific assets. This cognitive dimension enables the members of social networks to achieve a common goal. The three dimensions of social capital interact and affect each other (Tsai & Ghoshal, 1998). Casnueval et al. (2013) employed the three dimensions of social capital as a resource dimension of social capital to examine how this resource dimension affects firm performance in the airline sector. In addition to the tie strength of social networks, some studies (see Batjargal, 2003; Marsden & Campbell, 1984; 2012) have classified it as a relational dimension of social capital. Hence, in this study, the tie strength of business, government, and employee ties is considered as both a structural and relational dimensions of social capital, as it is an alliance of multi-dimensional social capital for the focal firm (Tsai & Ghoshal, 1998). The present study adopts a strategic resource dimension of social capital theory to analyze how Chinese listed firms use the three types of social networks, as a firm’s alliance of social capital affects its performance.

## Strategic alliance

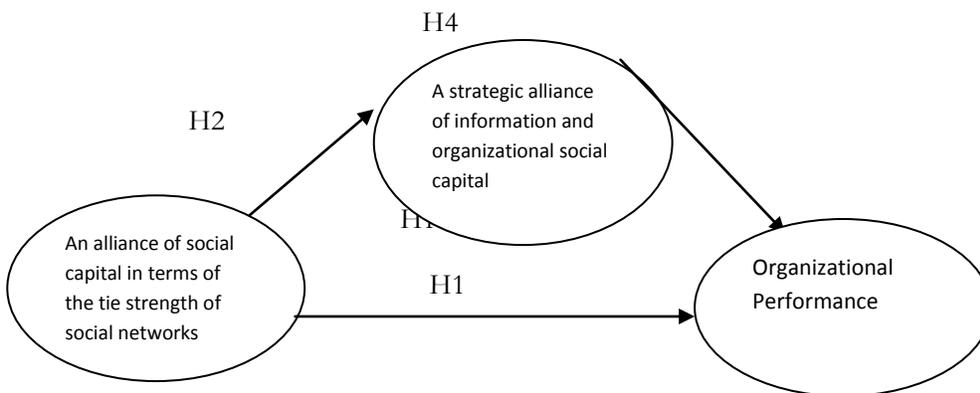
Strategic alliances have different names in different contexts. For instance, in the steel industry, “strategic alliances” are alliances in which a variety of information is exchanged (Koka & Prescott 2002). Gulati (1998:293) defined “strategic alliances as voluntary arrangements between firms involving exchange, sharing, or co-development of products technologies, or services”. Consistent with the existing literature (Gulati & Singh, 1998:781. Koka & Prescott, 2002), in this study, strategic alliances are defined as voluntary cooperation and coordination agreements between the exchange partners for the exchange and sharing of resources, including partners of information, knowledge, capital, technology, and firm-specific assets.

In the existing literature, the term “information” is defined as the market, products/services, production and industry policy information, and land or financial resources (such as financial capital and bank loans) (Chen & Wu, 2011; Wang *et al.*, 2011). Land or financial resources can be considered as key information because they are related to tax and interest rate information (Chen & Wu, 2011; Wang *et al.*, 2011). Gabbay & Leeders (1999: 3) defined organizational social capital as “*the set of resources, tangible or virtual, that accrue to a corporate player through the player through the play’s social relationships, facilitating the attainment of goals*”. The “corporate player” refers to the focal organization and its members in a social network. This definition means that organizational social capital can be defined as an asset (Leana & Van Buren, 1999). When social networks benefit organizations and their members in the attainment of their goals, they become organizational social capital (Gabbay & Leeders, 1999). Organizational social capital may help in obtaining individual or group goals and organizational goals (Gabbay & Leeders, 1999; Leana & Van Buren, 1999). In other words, top managers in the focal firm may use social networks to achieve their individual goals or the organizational goal. If the top managers in the focal firm put organizational goals before their individual goals, then the individual social network becomes organizational capital, which leads to an improvement in organizational performance (Harrington, 2001).

### **An alliance of social capital in terms of the tie strength of social networks-organizational performance relationship**

In the social network literature, there is some evidence that the tie strength of social networks as an alliance of social capital can provide valuable and useful resources for the focal firm to improve its performance. For instance, Batjargal (2003) provided evidence from a group of Russian entrepreneurs’ experiences, and Casnueval et al. (2013) used evidence from the alliance portfolios of airline firms to demonstrate this. In addition, Rowley et al. (2000) used strategic alliance networks to analyze the steel and semiconductor industries and found that both strong and weak ties are positively associated with firm performance. The nature of the ties or relationships in a social network can provide resources for the focal firm. But the focal firm can obtain competitive advantage, depending on resources its alliance partners (e.g. customers or suppliers) offer (Lavie, 2006). Moreover, Casanueva et al. (2013) found that the structural and relational dimensions of social capital affect access to partner resources in the airline sector. Therefore, it is vital for managers in a focal firm to choose the right alliance partners (a key customer, supplier, government official or employee) within social networks to build close alliance relationships in order to gain competitive advantage and achieve the firm’s profit and growth goals. On the other hand, under the hierarchical Guanxi structure, it is likely that the focal firm will use and keep long-term intimate alliance relationships with its business partners to exchange favours (such as valuable resources) in order to achieve its goals. In addition to Chinese government officials having power to allocate and distribute key resources to different firms, the focal firm has to keep a good Guanxi relationship with the right Chinese government officials in order to obtain key resources to achieve its profit goals (Chen & Wu, 2011). Strong ties are represented by trust and loyalty, and managers have intimate ties with employees, through which they motivate them to achieve their goals (Marin, 2012; Smith, 2005).

Thus, the following hypothesis is posed:**Hypothesis 1 (H1):** The tie strength of three type of social networks (business , government, and employee ties) as an alliance of social capital is positively associated with organizational performance. The hypothesized relationship is shown in Figure 1.

**Figure 1** The conceptual model

### The strategic alliance of information and organizational social capital-organizational performance indirect relationship

Based on social capital theory, the focal firm can access and use information and organizational social capital through the tie strength of the three types of social networks (business, government, and employee ties). Alliance relationships between the focal firm and its business partners, government officials or employees that involve both strong and weak ties can yield information (Davidsson & Honig, 2003; Granovetter, 1973), and organizational social capital to the focal firm (Harrington, 2001). On the other hand, Alliance relationships between the two exchange parties can establish a voluntary cooperation and coordination agreement (Gulati, & Singh, 1998), which are based on reciprocity and collective goals (Barnes et al., 2011). This agreement enables the alliance parties (the focal firm and its business partners, government officials, and employees) to exchange different forms of social capital such as a variety of information, and knowledge (Koka & Prescott, 2002).

Intensity and intimacy are characteristics of the tie strength of social networks (McGuire, 2007). Intensity represents the number of ties or repeated ties (alliances) that the focal firm has with its partners (e.g. business partners) (Gulati, 1995). Intimacy refers to close alliances or a friendly relationship (Barnes et al., 2011). The focal firm acquires information within social networks through the number ties or repeated ties, and the number ties affect the volume of information and its value in the focal firm (Hansen, 1999; Malik, 2012), as ties with more partners (such as customers and suppliers) in the social network can be more valuable than ties with only a few partners (Koka & Prescott, 2002). A focal firm that has repeated ties with multiple partners will need to increase the absorptive capacity at the organizational level through knowledge-sharing routines and learning, i.e. the “ability of a firm to recognize the value of new, external information, assimilate it, and apply it to commercial ends” (Cohen & Levinthal, 1990:128). This ability to absorb knowledge in terms of part of organizational learning can create value for the firm (Yli-Renko *et al.*, 2001).

Similar to Gabbay & Leeders’ (1999) definition of organizational social capital, Leana & Van Buren (1999:540) defined “organizational social capital as a resource reflecting the character of social relations within the organization, realized through members’ levels of collective goal orientation and shared trust”. This implicates that the voluntary cooperation and coordination agreement for the exchange of resource was through associability and trust between the exchange parties. As noted earlier, this agreement enables the exchange of resources such as firm specific assets, and thus the focal firm acquires organizational social capital within a social network based on trust and associability. Trust is a characteristic of social networks with strong ties (Marin, 2012); hence the focal firm obtains organizational social capital from its alliance partners through strong ties. Associability is defined as “the willingness and ability of individuals to define collective goals that are then enacted collectively” (Leana & Van Buren 1999:542). In this context, associability is considered as the cognitive dimension of social capital (Gabbay & Leeders, 1999), as well as one of the components of organizational social capital (Leana & Van Buren 1999). Since individuals within social networks have different goals, strong or close ties increase their willingness and ability to engage in social network activities to achieve collective goals. For instance, managers might increase individuals’ willingness to engage in decision making through strong ties within social networks (Harrington, 2001).

Moreover, associability can increase cooperation and the exchange of information, as well as knowledge within social networks (Leana & Van Buren 1999). On the other hand, the strategic alliance of information for the exchange of information and sharing knowledge as one way of knowledge transferring to organizational learning, which improved firm performance (Dyer, 1996; Dyer & Hatch, 2006; Dyer & Nobeoka, 2000; Dyer & Singh, 1998). For example, Dyer & Nobeoka (2000) found that Toyota access its suppliers' resources to create a knowledge-sharing network for knowledge transfer to organizational learning, which has a positive impact on its performance. Similarly, Chen & Wu (2011) found that focal firms have close ties with their business partners to access valuable resources to respond market changes effectively and maintain their adaptive capability, which has a positive effect on business performance. The presence of a strategic alliance of organizational social capital reflects that managers in the focal firm are using social networks for the exchange of resources to achieve organizational goals rather than individual goals (Gabbay & Leenders, 1999), and to focus on long-term performance (Lavie, 2008). Thus, the following hypotheses are posed:

**Hypothesis 2 (H2):** The tie strength of three types of social networks (business, government, and employee ties) as an alliance of social capital for the firm is positively associated with a strategic alliance of information and organizational social capital.

**Hypothesis 3 (H3):** A strategic alliance of information and organizational social capital is positively associated with organizational performance.

The mediating role of the strategic alliance of information and organizational social capital

The strategic alliance of information and organizational social capital is a set of mediators in the relationship between an alliance of social capital in terms of the tie strength of the three types of social networks and organizational performance. This is based on the strategic resource dimension of social capital theory (Nahapiet and Ghoshal, 1998; Putnam, 1993, 1995). This dimension of social capital theory proposes that social networks as social capital are a set of strategic resources that actors can access and use to achieve their goals (Nahapiet & Ghoshal, 1998; Tsai & Ghoshal, 1998). In line with the existing literature (Gulati, & Singh, 1998; Koka & Prescott, 2002), these strategic resources include an alliance relationship between the focal firm and its business partner, government officials or employees, and voluntary cooperation and the coordination of an agreement to share and exchange information and tangible/intangible assets (e.g. technology, innovation) between the focal firm and its alliance partners. It has been argued that strong ties within social networks as a strategic resource help the focal firm to acquire valuable resources such as information (Burt, 1992, 2000; Granovetter, 1992), and organizational social capital (Gabbay & Leenders, 1999; Harrington, 2001).

In the existing Chinese social network literature, very little research (such as Wang et al., 2011) has examined that the resource acquisition is a mediator in the relationship between Chinese social networks (such as business and government ties) and organizational performance. And less attention has been paid to how the right alliance partners as strategic resources affect organizational performance. Previous studies (e.g. Casanueva et al., 2013; Lavie, 2006) have pointed out that firms can gain competitive advantage if they are endowed with resources from the right alliance partners. In other words, if their alliance partners (such as their business partners) are not willing to co-operate and co-ordinate to exchange resources such as information, knowledge, capital and technology, that might affect the focal firm's performance. Hence, it is significant for the present study to focus on whether and how the tie strength of three types of social networks (business, government, and employee ties) as an alliance of social capital can influence organizational performance via the strategic alliance of information and organizational social capital. Managers in the focal firm may choose the right alliance business partner and keep close ties with their top managers, and managers may select government officials/employees and have strong ties with them to facilitate the exchange of information, ideas, knowledge, capital, and technology. For example, the focal firm has a lot of business partners, but not all business partners have the needed information, knowledge, and technology. Similarly, not all government officials have the power to allocate valuable resources to different industries in China. Previous Chinese social network studies (Chen & Wu, 2011; Li et al., 2011; Wang et al., 2011) state that managers' close ties with supplier executive can lead to the focal firm obtaining valuable information and good quality materials and services. Managers' close ties with customer executive can provide the focal firm with valuable market demand information.

Managers' strong ties with state-owned banks or other state financial institutions can facilitate firms to obtain lower interest rates on loans than other financial channels, if firms are short of financial liquid assets (Chen & Wu, Li et al., 2011).

A strategic alliance of information and organizational social capital plays the role of a cooperation and coordination agreement between the focal firm and its alliance partners that enables them to achieve common goals. Government officials and focal firms may lack common goals, that is, Chinese government officials might have their own individual goals, which are to develop their political careers, whereas the focal firm's goal will be to achieve its financial and strategic objectives (such as profit and growth objectives). As a result, government ties lack long-term co-operation (Sheng et al., 2011). In addition to government officials' short-term goals (they may wish to maximize their short-term interests and benefits may directly command the focal firm to undertake projects with high social returns but low profit return) (Sheng et al., 2011), such short-term goals of government ties may have a negative effect on business performance (Chen & Wu, 2011). It has been argued that government ties may cause corruption and cost a lot of money and time if government officials or managers have short-term goals (Gu et al., 2008; Nie et al., 2011). A strategic alliance of organizational social capital can help managers/government officials to focus on organizational goals/long-term goals rather than individual goals/short-term goals (Gabbay & Leeders, 1999; Lavie, 2008), because organizational social capital includes associability and trust, as noted earlier. Associability can enable all actors in an organization to achieve collective actions (Leana & Van Buren 1999). Empirical studies (such as Barnes et al., 2011) have found that trust plays the role of cooperation and coordination within social networks, which has a positive impact on firm performance. Thus, the following hypothesis is proposed:

**Hypothesis 4 (H4):** A strategic alliance of information and organizational social capital will mediate the positive relationship between an alliance of social capital, in terms of the tie strength of three types of social networks (business, government, and employee ties) and organizational performance.

### 3. Methods

#### Sample and data collection

The data were obtained through a survey of Chinese listed firms conducted from July 2014 to March 2015. The China Securities Market and Accounting Research (CSMAR) database was used to compile the sampling frame. Firm information (such as age, size, and ownership), financial performance data, and social network information can be easily accessed from the CSMAR database. The database is open to academics, and is more transparent and reliable than other available databases. In 2012, there were 2,578 Chinese listed firms in the Chinese A shares market. The sampling criteria were: i) firms must be listed on the Chinese A shares market (the majority of Chinese-owned companies are in the A shares market, where shares are traded in China's Renminbi currency); ii) firms must be located in open economic regions (such as Beijing, Shanghai, Shenzhen, and Guangdong) and non-open economic regions (such as Chongqing and Sichuan); and iii) firms must have used social networks (Guanxi ties).

The survey questionnaire was first developed in English and was then translated into Chinese. It was evaluated by two language experts (fluent in both Chinese and English) and two subject experts, and it was piloted in ten Chinese listed firms. An online version of the final survey, together with a cover letter, was developed using the Qualtrics platform. The link to the survey was sent to general managers of all of the listed companies that met the sampling criteria. In total, I received 345 responses; from these, I selected firms representing different locations (i.e., firms located both in non-open economic regions—such as Chongqing and Sichuan—and in open economic ones—such as Beijing, Shanghai, Shenzhen and Guangdong), different ages (10 years or more and less than 10 years), different sizes (large and small/medium sized companies), and different ownerships (state- and non-state-owned companies) in different industries. Previous studies have demonstrated that Chinese listed firms in the A shares market have different locations, ages, sizes and ownerships, which affects their use of social networks and their performance. A total of 300 firms were retained as the sample. The sample size of 300 is greater than the recommended sampling ratio (about 10% of a moderately large population) for a satisfactory degree of representation (Neuman, 2000). The pilot studies used to test the survey were not included in the final sample size of 300. Measures. The measurement items with their detailed descriptions for this study's independent, mediating, and dependent variables are listed in Table 1. Each construct of the measures and control variables is explained below. All of the statement-style items were measured on a seven-point Likert scale, from 1 (strongly disagree) to 7 (strongly agree).

*Independent variables – The tie strength of business, government, and employee ties* Following Granovetter (1973) and Brass *et al.* (1998), the tie strength of the three types of social networks was evaluated by measuring the intimacy and intensity of the alliance relationship:

i) Intimacy or closeness of alliance relationship. Respondents were asked to indicate the extent to which of they agreed with the statement about the intimacy or closeness of the relationships with the focal firm's key customers, suppliers, government officials or employees. An example of a statement is “*My relationships with key customers are like friends or family members or old classmates*”.

ii) Intensity of alliance relationship (number of ties). Respondents were asked to indicate the total number of key customers, suppliers, government officials and employees with whom they had contact, either face to face, by email, or by telephone in an average month. For example, the intensity of employee ties was measured using the following statement “*please indicate the total number of key employees that you have contacted by email, face to face (meetings), or by telephone in an average month*”.

### **Mediating variable – The strategic alliance of information and organizational social capital**

Following the studies of Chen & Wu (2011) and Wang *et al.* (2011), five items were adapted to measure the strategic alliance of information. Respondents were asked to the extent to which the focal firms and its employees could obtain and exchange information for i) customer needs, ii) innovation, and iii) production for industry trends, iv) whether they could obtain and use industry policy information for planning/managing new product/service trends, and v) whether they can use and manage land or financial resources (financial capital and bank loans) to develop new products/services.

Following Gabby & Leenders (1999), Leana & Van Buren (1999), and Harrington (2001), three items were adapted to measure the strategic alliance of organizational social capital. Respondents were asked to relate the extent to which i) they consider their organizational goals prior to individual ones, ii) they and their alliance partners play the role of cooperation and coordination to achieve collective actions, and iii) their employees engage in social network activities to attain collective goals.

### **Dependent variable -Organizational performance**

Financial performance indicators such as return on assets, return on equity and market share were used to objectively measure organizational performance in prior studies. However, according to Li *et al.* (2011:170), previous research has shown that researchers have widely adopted subjective scales and that “there are high correlations between subjective and objective firm performance measures”. Hence, subjective scales were employed to measure financial and strategic performance in this study. They were the focal firm's actual performance as senior managers evaluated their firms' performance based on their firms' public annual reports. Five items, adapted from Park & Luo (2001), Chen & Wu (2011), Sheng *et al.* (2011), and Chung (2011), were used to measure the financial dimensions of organizational performance: market share, growth in sales, profitability, product and service quality, and customer satisfaction. Respondents were asked to indicate their firm's current performance in terms of the aforementioned aspects, compared to that of other firms in the same industry. Three items were used to measure the strategic dimension of organizational performance in terms of whether the firm had met its profitability and growth objectives in the past three years from its financial statements, and whether the firm had increased product/firm awareness. In addition to validating the subjective measure of organizational performance, I correlated it with the objective performance (i.e., the same sample of 300 firms' profit in each year from the year of 2010 to 2012). The correlation between the subjective measure of organizational performance and the objective measure is .319 ( $p < .05$ ). This correlation shows that this subjective measure (the survey measure of organizational performance) is valid.

### **Control variables**

Firm size, age, head-office location, and ownership were controlled for in regard to their potential impacts on organizational performance (Li & Sheng, 2011; Park & Luo, 2001; Peng & Luo, 2000). The sample firms were divided into two sizes: large firms and SMEs. The firms were categorized as SMEs if their capital investment was less than RMB¥ 400,000,000, their annual revenue was less than RMB ¥ 300,000,000, and their number of employees was less than 2,000.

Firm size operated as a dummy variable by coding 1 for a large firm and 0 for a SME. For the firm age variable, firms were categorized into two groups: younger (under 10 years) and older ones (10 years or more), and were coded 0 and 1 respectively. Following Park & Luo (2001), firm location was categorized into western and eastern economic areas; this was done because the social networks found in the two areas have different effects on firm performance. Thus, firm location was coded 1 for Chinese eastern economic areas and 0 for Chinese western ones. According to the CSMAR database, Chinese listed firms present three types of ownership: state-owned, private, and joint venture. I also followed Park & Luo's (2001) classification and divided the firms into two types, based on ownership: state- and non-state-owned companies (the latter included private and joint venture companies). This was done because non-state-owned firms have been found to use social networks more than state-owned ones. State- and non-state-owned firms were coded 0 and 1 respectively.

#### 4. Analysis and results

Structural equation modeling (SEM) was used to test the hypotheses; it is a combination of a measurement model (confirmatory factor analysis, CFA) and a structural model (Anderson & Gerbing, 1988). A measurement model was used to test whether each construct of the measures illustrated sufficient reliability and validity, and a structural model was used to test the hypotheses and best fit the data as recommended by Anderson & Gerbing (1988). In this study, Bootstrapping and Sobel's z-statistic test approaches were used to test the mediating hypotheses as suggested by Baron & Kenny (1986) and Hayes (2009). The analyses and results are discussed below.

##### Measurement model

Following Anderson and Gerbing's (1988) recommended guidelines, the reliability, convergent validity, and discriminant validity of the main constructs were established first (see Table 1) before testing the structural model. To assess the constructs of the measures, a three-factor measurement model was estimated using AMOS 21 (see Table 1 and Appendix A).

**Table 1** Assessment of the measurement model: reliability, convergent and discriminant validity

Items	Standardized Loadings	CR	AVE	MS V	ASV
<b>Organizational Performance</b>		<b>.9555</b>			<b>.293</b>
			<b>.728</b>	<b>.336</b>	
My firm has met its profitability objectives (sop1)	0.90***				
My firm has met its growth objectives (sop2)	0.83***				
My firm has increased product/firm awareness (sop3)	0.71***				
Market share (fop1)	0.92***				
Growth in sales(fop2)	0.96***				
Profitability (fop3)	0.95***				
Quality of product and service (fop4)	0.82***				
Customer satisfaction (fop5)	0.81***				
<b>A strategic alliance of</b>		<b>.890</b>			<b>.201</b>
			<b>.507</b>	<b>.336</b>	
i) information: I can obtain and exchange information for customer needs (ainfo1) innovation (ainfo2) production for our industry development (ainfo3)	0.57*** 0.84*** 0.84***				
I can obtain and use industry policy information for planning/ managing new product/service trends (ainfo4) I can use and manage land or financial resources (financial capital and bank loans) to develop new products/services (ainfo5)	0.65*** 0.59***				
ii) Organizational social capital I and employees put our firm's goals before individual goals	0.66***				

(os1)					
I and my alliance partners have played the role of cooperation and coordination to achieve collective actions (os2)	0.69***				
My firm's employees engage in social networks' activities to attain collective goals (os3)	0.80***				
<b>An alliance of social capital in terms of the tie strength of social networks</b>		<b>.888</b>	<b>.505</b>	<b>.250</b>	<b>.158</b>
The total number of key customers contacted in an average month (tie1a)	0.82***				
The total number of key suppliers contacted in an average month (tie1b)	0.66***				
The total number of key government officials contacted in an average month (tie1d)	0.69***				
The total number of key employees contacted in an average month (tie1e)	0.55***				
My relationships with key customers are like friends or family members or old classmates (tie3a)	0.92***				
My relationships with key suppliers are like friends or family members or old classmates (tie3b)	0.76***				
My relationships with key government officials are like friends or family members or old classmates (tie3d)	0.58***				
My relationships with key employees are like friends or family members or old classmates (tie3e)	0.62***				

Note: \*\*\*p<0.001; CR is composite reliability; AVE is average variance extracted; MSV is Maximum Shared Variance; ASV is Average Shared Variance.

From Table 1, it can be seen that for each construct, the composite reliability estimates were above the recommended threshold of 0.70 (range from .888 to 0.955), indicating that the measures are reliable (Fornell & Larcker 1981). The average variance extracted (AVE) and the significance and magnitude of standardized factor loadings were used to assess the convergent validity. In Table 1, all factor loadings are above 0.5 (lowest standardized loading=0.55, highest=0.96) and significant (p<0.001). AVE is greater than 0.50, which demonstrates the measures' convergent validity (Hair et al., 2010). Maximum Shared Variance (MSV) and Average Shared Variance (ASV) were used to assess discriminant validity. In Table 1, it can be seen that the MSV and ASV for each factor (i.e. organizational performance, the strategic alliance of information and organizational social capital, and an alliance of social capital, in terms of the tie of social networks) are less than their AVE, providing evidence of discriminant validity. Moreover, the factor correlation matrix (Table 2) further establish discriminant validity of the scales.

Table 2 Factor correlation matrix with square root of the AVE on the diagonal The strategic alliance of information and organizational social capital	Organizational Performance	The alliance social capital of the tie strength of social networks
0.712		
0.580	0.853	
0.257	0.500	0.710

Note: The diagonal factors indicate the square root of AVE

Hu & Bentler (1999) and Hair *et al.* (2010) suggest that performing SEM including a measurement model and a structural model over fit are examined using the following indices: the ratio of Chi-square to degrees of freedom (Chi-square/df); the comparative fit index (CFI); the root mean square error of approximation (RMSEA); the p close fit (PCLOSE); the standardised root mean square residual (SRMR) and the p-value. According to Hu & Bentler (1999), a ratio of Chi-square/df ranging between one and three is considered acceptable; the value of CFI should exceed 0.95 if the model is to fit the data really well.

A value of RMSEA equal to or less than 0.06 means a good fit, and from 0.08 to 0.1 indicates a mediocre fit. PCLOSE is greater than 0.05 indicating an exact fit; SRMR is less than 0.08 meaning a good fit. The P-value is less than 0.05 meaning a significant fit. Table 3 indicates the model fit indices for the three-factor measurement model: Chi-square/df = 2.811; CFI = 0.956; RMSEA = 0.051; PCLOSE = 0.98; SRMR = 0.065, and P-value = 0.001, all of which indicate a satisfactory model fit. Therefore, Table 3 shows the goodness of fit statistics for the measurement model, which meets all of the thresholds from Hu & Bentler (1999), demonstrating an adequate model fit.

**Table 3 Model fit statistics for the measurement model**

Metric	Observed value	Idea Threshold
CMIN/df	2.811	Between 1 and 3
CFI	0.956	>0.95
RMSEA	0.051	<0.60
PCLOSE	0.980	>0.050
SRMR	0.065	<0.080
P-value	0.001	<0.05

#### Structural model

The hypothesized relationships were tested using structural equation modeling. According to Hu & Bentler (1999), the results for the structural model in Table 4 show an adequate model fit with the data: Chi-square/df = 2.573;  $p < 0.001$ ; comparative fit index (CFI) = 0.96; root mean square error of approximation (RMSEA) = 0.047; P close fit (PCLOSE) = 0.965 and standardized root mean square residual (SRMR) = 0.076.

**Table 4 Model fit statistics for the structural model**

Metric	Observed value	Idea Threshold
CMIN/df	2.573	Between 1 and 3
CFI	0.960	>0.95
RMSEA	0.047	<0.60
PCLOSE	0.965	>0.050
SRMR	0.076	<0.080
P-value	0.001	<0.05

The results of the structural model (see Table 5 and the structural model in Appendix B) show that an alliance of social capital, in terms of the tie strength of social networks is positively associated with organizational performance, supporting Hypothesis 1 ( $\beta=0.33$ ,  $p<0.001$ ). Hypothesis 2, which predicts that an alliance of social capital, in terms of the tie strength of social networks will be positively associated with a strategic alliance of information and organizational social capital was also supported ( $\beta=0.26$ ,  $p<0.001$ ). A strategic alliance of information and organizational social capital is positively associated with organizational performance ( $\beta=0.46$ ,  $p<0.001$ ), supporting Hypothesis 3.

In terms of the effects of the control variables, the results indicate that firm size ( $\beta=0.24$ ,  $p<0.001$ ) and location ( $\beta=0.15$ ,  $p<0.005$ ) have significant impacts on organizational performance within an alliance of social capital, in terms of the tie strength of social networks (see Table 5). Firm age and ownership have no significant effects on organizational performance with an alliance of social capital, in terms of the tie strength of social networks as their p-values exceed 0.05 (see Table 5).

**Table 5** Results for the hypothesized model

Hypothesized models	Path	Standardized path coefficient	P value	Results
H1	Social networks@ → Organizational performance	0.33	***	Supported
H2	Social networks @ → A strategic alliance of information and Organizational social capital	0.26	***	
H3	A strategic alliance of information and organizational social capital → Organizational performance	0.46	***	Supported
Controls	Firm size → Organizational performance	0.24	***	
	Firm age → Organizational performance	0.01	NS	
	Firm location → Organizational performance	0.15	0.002	
	Firm ownership → Organizational performance	0.04	NS	

Note: \*\*\* $p < 0.001$ , NS is not significant ( $p > 0.05$ ), “Social networks @” is “an alliance social capital in terms of the tie strength of social networks”.

For Hypothesis 4, I followed Hayes’ (2009) suggestion to use bootstrapping to establish the mediating effects in line with Baron & Kenny’s (1986) guidelines. If both the direct relationship with the mediator and the indirect relationship are significant ( $p < 0.05$ ), then there is partial mediation (Baron & Kenney, 1986). In doing so, three steps were needed to test the set of mediators (a strategic alliance of information and organizational social capital) in the relationship between an alliance of social capital, in terms of the tie strength of social networks and organizational performance. First, the set of mediators was removed from the structural model to test the standardized direct effect without mediators for Hypothesis 4, and then the results showed that the relationship between an alliance of social capital, in terms of the tie strength of social networks and organizational performance was significant ( $\beta = 0.417$ ,  $p < 0.001$ ). Second, the results showed that the standardized direct effect with mediators was significant ( $\beta = 0.329$ ,  $p = 0.002$ ); this means that both the direct effect of an alliance of social capital, in terms of the tie strength of social networks on a strategic alliance of information and organizational social capital, and the direct effect of a strategic alliance of information and organizational social capital were significant. Third, the results indicated that the standardized indirect effect was significant ( $\beta = 0.118$ ,  $p = 0.005$ ), that is, the direct effect on the relationship between an alliance of social capital, in terms of the tie strength of social networks and organizational performance, through a strategic alliance of information and organizational social capital was significant. Overall, the results show that both the direct effect with the mediator ( $p = 0.002$ ) and the indirect effect ( $p = 0.005$ ) are significant; thus a strategic alliance of information and organizational social capital partially mediates the relationship between an alliance of social capital, in terms of the tie strength of social networks and organizational performance.

In addition to the bootstrapping method, Sobel’s z-value test (Sobel, 1982) was used to assess the significance of a strategic alliance of information and organizational social capital as a set of mediators in the relationship between an alliance of social capital, in terms of the tie strength of social networks and organizational performance. If the z-value is greater than 1.96 ( $p < 0.05$ ), the mediating role of a strategic alliance of information and organizational social capital is significant. The z-value for the indirect relationship between an alliance of social capital, in terms of the tie strength of social networks and organizational performance was 3.36 ( $p = 0.0008$ ). Hence, Hypothesis 4 is supported.

## 5. Discussion and Conclusion

A positive association between an alliance of social capital, in terms of the tie strength of three types of social networks (business, government, and employee ties), and organizational performance (supporting hypothesis 1) was found. This finding is similar to the existing literature (see Luo & Chen, 1997; Park & Luo, 2001; Peng & Luo, 2000), which showed that top managers maintain regular and close ties with their business partners for the benefit of their business (such as reducing costs and satisfying customers’ needs).

Besides this, this finding indicates that managers focus on having the right alliance partners (key customers, suppliers, government officials or employees) and maintain intimate relationships with them, which has a positive impact on their firm's performance. This is because key business partners have much needed valuable resources (Casanueva et al., 2013), and key government officials have the power to allocate and distribute valuable sources to different companies in different industries (Chen & Wu, 2011). The second hypothesis, which posits a positive association between the tie strength of the three types of social networks as an alliance of social capital and the strategic alliance of information and organizational social capital, is also supported. This is consistent with the argument that key business partners (the right alliance partners) have valuable sources that are needed by the focal firm and key government officials have the power to allocate and distribute key resources to different firms in different industries in China (Chen & Wu, 2011). The result is also in line with the argument of social capital theory; i.e., that the focal firm's close ties with the right alliance partners can be considered as a strategic resource dimension of social capital through which actors can acquire and exchange information and assets to achieve their exchange agreements (Gabby & Leenders, 1999; Tsai & Ghoshal, 1998).

Hypothesis 3, which proposes a positive association between a strategic alliance of information and organizational social capital and organizational performance, is also supported. The finding indicates that voluntary co-operation and the co-ordination of an agreement to share and exchange information and tangible/intangible assets (such as technology, innovation) between the focal firm and the right alliance partners (such as the key business partners, government officials, and employees) has a positive effect on organizational performance. This is because 1) the exchange of information and intangible assets as knowledge transfer to the focal firm enables it to gain competitive advantage (Dyer & Hatch, 2006; Dyer & Singh, 1998); and 2) organizational social capital as a public asset is the cognitive dimension of social capital, which facilitates the achievement of collective goals (such as the profit growth goal) between the focal firm and its alliance partners (Casanueva et al., 2013).

The results show that a strategic alliance of information and organizational social capital mediate the positive relationship between an alliance of social capital, in terms of the tie strength of the three types of social networks and organizational performance (supporting hypothesis 4). The results show that a strategic alliance of information and organizational social capital can have a co-operation and co-ordination role in this positive association. The focal firm has close ties with the right alliance partners, as the alliance of social capital can provide resources for actors such as the focal firm, which leads to positive impacts on its performance through co-operation and the exchange of information, knowledge, and other tangible/intangible assets. In other words, the alliance partners (such as customers, suppliers, government officials, and employees) offer valuable sources for the focal firm to use to achieve its profit goals; this depends on voluntary co-operation and the co-ordination of an agreement between the focal firm and its alliance partners (Casanueva et al., 2013).

In brief, it can be concluded that the results provide evidence that an alliance of social capital, in terms of the tie strength of social networks, is positively associated with organizational performance and that the strategic alliance of information and organizational social capital plays an important mediating role in the alliance of social capital, in terms of the tie strength of social networks—organizational performance relationship.

## **6. Theoretical and practical implications**

The aim of the study was to understand how the tie strength of social networks as an alliance of social capital influences organizational performance via the strategic alliance of information and organizational social capital in the Chinese context. To this end, the study has examined how Chinese listed companies use the tie strength of social networks as an alliance of social capital to achieve profit and growth goals. The results show that a strategic alliance of information and organizational social capital plays a significant mediating role in the positive relationship between the alliance of social capital, in terms of the tie strength of the three types of social networks and organizational performance.

This provides empirical evidence for the theoretical proposition posited by social capital theory; i.e., managers in the focal firm choose the right alliance partners and maintain close and strong ties with them as an alliance of social capital to provide strategic resources through voluntary co-operation and the co-ordination of an agreement between the focal firm and its alliance partners to exchange information, knowledge, and other assets (such as capital, technology and innovation), and this can have a positive effect on organizational performance.

From a practical perspective, the study contributes to our understanding of how Chinese listed firms use social networks at an individual level as an alliance of social capital, in terms of the tie strength of social networks via a strategic alliance of information and organizational social capital, which, in turn, can aid the improvement of organizational performance. In China, information is not publicly available for use by firms; it is thus common practice for managers to use their business, government, and employee ties to acquire and exchange information and the organizational social capital needed to achieve their profit and growth goals. The study shows that the alliance of social capital, in terms of the tie strength of the three types of social networks is positively associated with the strategic alliance of information and organizational social capital and that the strategic alliance of information and organizational social capital is associated with organisational performance. This suggests that those managers who aim at improving organizational performance should select the right alliance partners (such as the key customers/suppliers/government officials/employees) and establish strong and close ties with them as an alliance social capital of the firm; this is because such an alliance of social capital will enhance the acquisition and exchange of information in their organizations, which will help the organization to achieve its goals in a timely and more cost effective manner. The findings also suggest that managers need to put organizational goals before their individual goals and encourage their employees to attend social networks activities such as training and conferences, as well as enabling co-operation and co-ordination between the focal firm and the right alliance partners; this is because such cognitive dimensions of social capital of the firm will enable the collective action to achieve the focal firm's profit and strategic goals.

## 7. Limitations

This study has three main limitations. First, it did not include how the external factors, such as the political environment and Chinese traditional culture as control variables, may affect the focal firm's ability to acquire and manage strategic resources through the social networks. Future research may include these elements as control variables to examine whether they affect Chinese firms' ability to obtain and manage information and organizational social capital to achieve their profit and growth goals.

Second, the study has not investigated how elements of Chinese traditional culture as relational dimension of social capital (such as reciprocity) provides benefits for Chinese listed firms to obtain and manage resources. For example, how reciprocity as an exchange of favours, can provide mutual benefits in Chinese social networks. Further research could consider these elements (e.g. reciprocity) of social capital as moderators or mediators to examine how they influence Chinese firms in acquiring and managing resources; this, in turn, may affect organizational performance.

Third, although the survey data has made a high quality of reliability and validity, it is imperfect. For instance, this study used subjective measures of organizational performance. Some scholars consider that the use of objective measures of firm performance reduces the perceptual measure bias, although managers evaluated their firm performance based on their firms' annual reports in this study. The survey data lacked longitudinal data as it was gathered at a single moment in time, from July 2014 to March 2015. This might not represent how the collected data may change in 2016 and 2017, which will affect any test of the relationship between an alliance of social capital, in terms of the tie strength of social networks, and organizational performance. Further research could gather longitudinal survey data (such as three times at six- monthly intervals).

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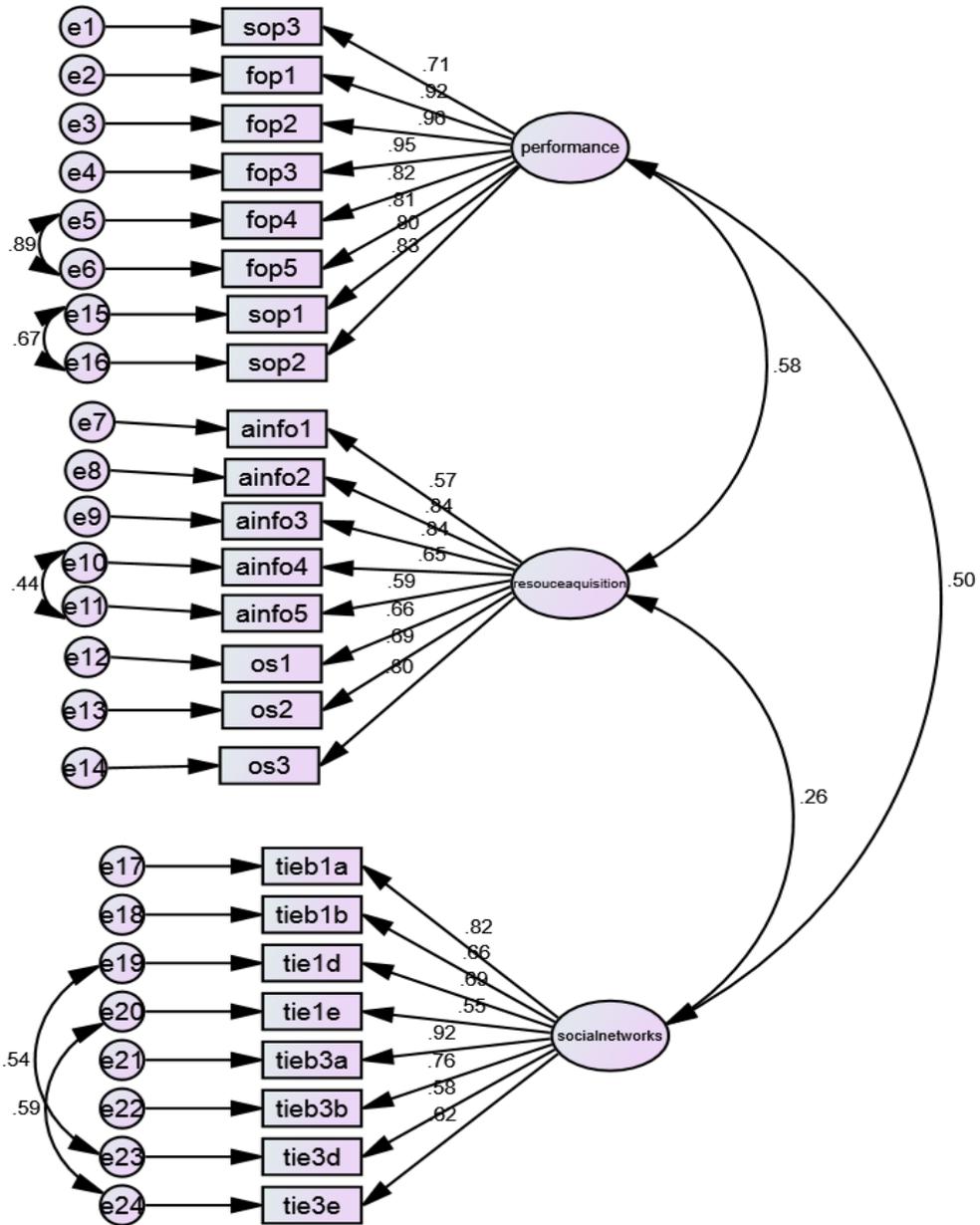
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**Appendices**

**Appendix A: A three factor measurement model**

Note: Performance as organizational performance; ovals represent latent variables, rectangles represent observed variables.



**Appendix B: The structural model**

Note: Performance as organizational performance; size as firm size, age as firm age, location as firm's head office location, owner as firm ownership; ovals represent latent variables, rectangles represent observed variables.

