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Hefu Liu
University of Science and Technology of China, liuhf@ustc.edu.cn

Weiling Ke
Clarkson University, wke@clarkson.edu

Kwok Kee Wei
City University of Hong Kong, isweikk@cityu.edu.hk

Yaobin Lu
Huazhong University of Science & Technology, luyb@mail.hust.edu.cn

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Hefu Liu, School of Management, University of Science and Technology of China, China, liuhf@ustc.edu.cn

Weiling Ke, School of Business, Clarkson University, US, wke@clarkson.edu

Kwok-Kee Wei, College of Business, City University of Hong Kong, Hong Kong,isweikk@cityu.edu.hk

Yaobing Lu, School of Management, Huazhong University of Science and Technology, China, luyb@mail.hust.edu.cn

Abstract

Social capital is increasingly regarded as a crucial predictor of performance improvement. However, the Internet is challenging the previous understanding of social capital. In this study, we conduct a research to empirically test the social capital theory in the context of e-business. Specifically, we investigate the influence of social capital on firm substantial and symbolic performance, and compare the influence of social capital on substantial performance to on symbolic performance in the context of e-business. Data were obtained from a survey administered to 205 firms in China. The results suggest that structural and relational capital could influence substantial and symbolic performance significantly. However, we find that cognitive capital could not impact substantive performance significantly, but can influence symbolic performance significantly. We conclude with implications and suggestions for future research.

Keywords: Social capital, substantive performance, symbolic performance, Internet

1. INTRODUCTION

Social capital is increasingly regarded as a crucial predictor of performance improvement. It can serve as a mechanism that engenders access to resources through social networks, and is regarded as an enduring source of competitive advantage (Arregle et al. 2007; Carey et al. 2011; Moran 2005; Stam et al. 2014). However, the Internet is challenging the previous understanding of social capital, since the Internet, with its open connections and low switching cost, is reconstructing managerial social networks and ties (Li et al. 2010; Porter 2001). The diffusion of the Internet is pushing organizations to reconstruct the fragmented, silo-oriented network with an open, real time, broad partner basis, low switching cost, and globally connected format (Boyer & Olson 2002; Liu et al. 2010). Yet, it also breeds more potential threats by allowing partners to switch from the existing relationship and to cooperate with others more easily within global markets (Porter 2001). However, it is not clear how the Internet affects the significance of social capital (Chiu et al. 2006; Uslaner 2000).

On the other hand, the existing empirical research has focused on investigating social capital's effect on substantive performance and ignored its effect on symbolic performance (e.g., legitimacy). The findings on the relationship between social capital and substantive performance have mixed or even controversial. For example, while a few studies indicate that structural capital, such as supply chain integration, improves substantive performance (e.g., Cagliano et al. 2006; M. T. Frohlich & Westbrook 2001), others find that the integration is more rhetoric than reality (e.g., Fawcett & Magnan 2002; Power 2005). In addition, institutional theorists indicate that cognitive capital, such as conformity to social norms, not only helps an organization to improve substantive performance, but also symbolic performance (Heugens & Lander 2009). Meanwhile, scholars propose that the open and interconnect nature of Internet may make firms easier to achieve symbolic benefit than substantial benefit from social capital. Thus, a research differentiating substantial and symbolic performance is critical and necessary to help resolve the inconsistency in the extant literature and crystallize how organizational performance may be enhanced by the different dimensions of social capital.

In this study, we conduct a research to empirically test the social capital theory in the context of e-business since social capital in China is of particular interest to researchers and practitioners due to two reasons (Batjargal 2007). First, research on Chinese institutional, regulatory, and human capital issues remains insufficient. Second, China's relational, intense cultural milieu makes social networks even more dynamic and more important for performance (Bat Batjargal 2007a; Xiao & Tsui 2007). Specifically, we investigate the influence of social capital on firm substantial and symbolic performance, and compare the influence of social capital on substantial performance to on symbolic performance in the context of e-business. Further, we study the relationship between the three dimensions of social capital. We expect that the research can make the following contributions: improving our conceptual and operational understanding of social capital in the context of e-business; advancing theory on the outcomes of social capital; and providing theory-based managerial guidelines for developing social capital in the context of e-business to maximize organizational benefits. Given numerous global firms are operating in China, this research will benefit them by offering insights into better managerial social networks management.

2. THEORETICAL BACKGROUND

As Internet-based social network is becoming the new era of supply chain management, it challenges our current understanding of the impacts of traditional social capital on firm performance. Specifically, the Internet makes managers face a new, dynamic, and information-rich business environment (Granados et al. 2010; Porter 2001; Zhu et al. 2006). Such an environment challenges firms' cognitive capacity, leading to information overload for decision makers (Jones et al. 2004; Malhotra et al. 2005). Further, while the Internet could facilitate a firm's product/service marketing and distribution, it also makes the firm's competitors better informed, which may prevent the firm from capturing superior profits from information transparency (Granados et al. 2010). Therefore, it is imperative to understand how social capital affects firm performance in the e-business context (Dong et al. 2009; M. T.

Frohlich & Westbrook 2001; Power & Singh 2007; Rosenzweig 2009).

Nahapiet and Ghoshal (1998) categorize social capital into the dimensions of structural, relational, and cognitive capital. The three dimensions reflect valuable assets for an organization, since they enable an organization to exchange a variety of information, knowledge, and other forms of capital through managerial social networks and ties (Krause et al. 2007; Villena et al. 2011). Specifically, structural capital reflects the overall pattern of network structures, such as a supply chain that connects customers and suppliers (Jansen et al. 2011; Krause et al. 2007; Nahapiet & Ghoshal 1998). In the existing literature, scholars increasingly propose the managerial social networks and ties, in general, and SCI in particular, as the specific structural capital. Meanwhile, due to the diffusion of the Internet is reconstructing managerial social networks, scholars and practitioners are increasingly treating Internet-enabled SCI (IeSCI). The literature suggested that IeSCI involves the dimensions of online supplier integration, online customer integration, and online internal integration. Online supplier and customer integration reflect the extent to which a firm with its suppliers or customers to structure inter-organizational information, practices, and processes into interconnected, synchronized processes via the Internet (Rai et al. 2006); Online internal integration refers to the degree to which a firm structure its own organizational information, practices, and processes into interconnected, synchronized processes via the Internet.

Relational capital reflects the nature of relationship, which is behavioral, as opposed to structural (Krause et al. 2007; Lawson et al. 2008b; Moran 2005; Nahapiet & Ghoshal 1998). This capital allows organizations to govern relations based on trust, rather than strict formal contracts (Patnayakuni et al. 2006). According to its attributes, relational capital is associated with trust and commitment (Krause et al. 2007; Maurer & Ebers 2006; Xiao & Tsui 2007). Moreover, scholars argue that guanxi is a special and critical dimension of relational capital in Chinese culture (B. Batjargal 2007b; Gu et al. 2008; Xiao & Tsui 2007). Specifically, trust refers to one party's willingness to depend on another party based on the anticipated beneficial behavior of that party (Ke et al. 2009), commitment is defined as a firm's duty to undertake some activity for the relationship in the future (Nahapiet & Ghoshal 1998), and guanxi refers to "the durable social connections and networks a firm uses to exchange favors for organizational purposes" (Gu et al. 2008 p.12).

Cognitive capital would be presented when members of a network develop the shared meaning and understanding (Krause et al. 2007; Sherif et al. 2006). With the shared meaning and understanding, members can develop a self-reinforcing sense making process across the network (Krause et al. 2007). The concept of shared values has been widely treated as the critical dimension of cognitive capital (Inkpen & Tsang 2005; Krause et al. 2007). Data consistency is the other critical cognitive capital, in considering the context of e-business (Chiu et al. 2006; Patnayakuni et al. 2006). Specifically, shared values refer to the shared understanding and beliefs about what behaviors, goals and policies are important or unimportant, appropriate or inappropriate, and right or wrong among members of a network (Krause et al. 2007); and data consistency reflects the degree of the establishment of common data definitions and consistency in stored data across a relational network (Rai et al. 2006).

3. RESEARCH FRAMEWORK AND HYPOTHESES

According to the existing social capital, institutional, and managerial literature, we propose a conceptual framework as shown in Figure 1 to guide our research. We extend the existing social capital research by investigating the value creation role of social capital in terms of both substantive and symbolic performance, and the relationships among structural, relational, and cognitive capital, in the context of e-business.
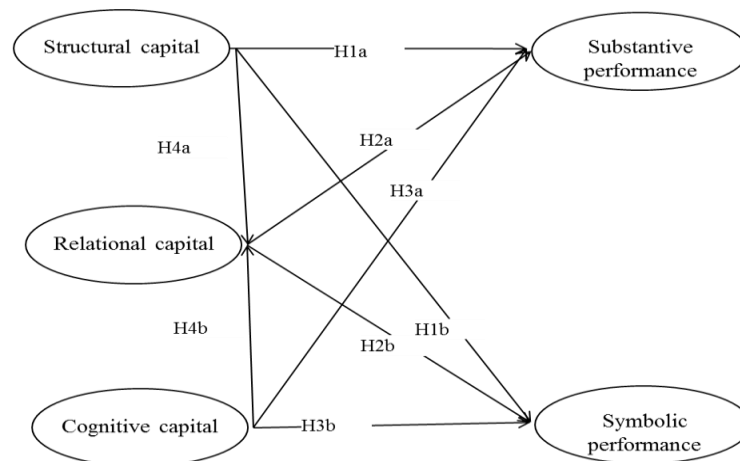
Figure 1. Conceptual framework

The impacts of structural capital in general, and IeSCI in particular, on substantive performance has gained support from previous studies (e.g., Devaraj et al. 2007; Flynn et al. 2010; M.T. Frohlich 2002). Lee and Whang (2004) contend that the IeSCI indicates tight structural coordination and collaboration within the related network. Cagliano et al. (2006) and Fabbe-Costes et al. (2007) thus suggest that IeSCI has positive influence on operational performance while Vickery et al. (2003) posit that IeSCI helps the organization to improve customer service. Thus, we expect that online information integration, online planning synchronization and online operational coordination have positive relationships with substantive performance.

In addition, we also expect structural capital can improve symbolic performance. Scholars indicate that the prevalence of the Internet is leading a new era of supply chain management: the IeSCI (Devaraj et al. 2007; Esper et al. 2010; M.T. Frohlich 2002; M. T. Frohlich & Westbrook 2002). In this view, conducting IeSCI would allow an organization to convey an image of rational and effective decision making within the network, and thus enhance its legitimacy (Greenwood et al. 2002). Further, institutional theorists also suggest that field members are usually indifferent to certain amounts of differentiation and thus allow organizations a "range of acceptability" around the ordained template (Deephouse 1999). As such, the impact of structural capital on symbolic performance may be weaker than on substantive performance in the context of e-business.

H1a: An organization's structural capital has positive effects on its substantive performance

H1b: An organization's structural capital has positive effects on its symbolic performance

H1c: The effects of structural capital on substantive performance are stronger than on symbolic performance.

Social capital theorists suggest that relational capital can lead to superior substantive performance. This thesis has gained consistent support from a plethora of empirical studies (Krause et al. 2007; Lawson et al. 2008a; Min et al. 2008; Villena et al. 2011). In the case of e-business, the open and lean nature of e-business, compared to the traditional business relying on face-to-face interactions, would lead to even higher uncertainties about the trading parties' identity, partners' opportunistic behavior, and network stability (Ba & Pavlou 2002; Zhu et al. 2006). High relational capital could allow organizations to avoid the opportunistic behaviors within the network, to decrease business risks, and to improve operational performance and customer service (Ba & Pavlou 2002; Jøsang et al. 2007;

Villena et al. 2011). Thus, we expect that relational capital will be critical drivers for substantive performance improvement in the context of e-business.

Relational capital is also an important source of an organization's legitimacy (Hitt et al. 2002; Tang 2009), which is the essence of symbolic performance (Heugens & Lander 2009). Specifically, high relational capital could enhance an organization's image of trustworthiness and acceptance, the critical nature of legitimacy, in its field (Lu & Xu 2006). Further, the open and global connection nature of the Internet could greatly diffuse such image within the organization's network. Therefore, we expect that symbolic performance can be significantly affected by relational capital in the context of e-business. Further, Park and Luo (2001) note that relational capital normally helps an organization to position itself in the market, and it may not improve the organization's internal operations significantly. Thus, we propose that the impact of relational capital on symbolic performance would be stronger than on substantive performance.

H2a: An organization's relational capital has positive effects on its substantive performance.

H2b: An organization's relational capital has positive effects on its symbolic performance

H2c: The effects of relational capital on substantive performance are weaker than on symbolic performance.

The shared values and language within a network has been treated as a desirable weapon to improve substantive performance (Inkpen & Tsang 2005; Krause et al. 2007; Lee 2007; Maurer & Ebers 2006; Patnayakuni et al. 2006; Rai et al. 2006). Specifically, shared values and language could allow an organization to decrease the potential conflicts and misunderstanding within its network, and then to easily obtain enough resources and knowledge to improve operational performance and customer service (Jap & Anderson 2003; Rossetti & Choi 2005; Zaheer et al. 2000). Indeed, empirical studies have lent support to this argument (Krause et al. 2007). In the context of e-business, the importance of cognitive capital for substantive performance could be strengthened because of the open standards and global connection feature of Internet (Zhu et al. 2006). Thus, we expect that high cognitive capital would lead to superior substantive performance in the context of e-business.

Institutional theorists contend that conformity to social norms can improve an organization's symbolic performance (Heugens & Lander 2009). Cognitive capital allows the organization to understand and accept the collective expectations to conduct work professionally, and to establish legitimization successfully (DiMaggio & Powell 1983). Further, the open standards of the Internet facilitate the mutual understanding process, and global connection diffuses the image of trustworthiness and acceptance of an organization with high cognitive capital within its network. In this view, we expect that cognitive capital is critical for symbolic performance improvement too. On the other hand, institutional theorists also indicate that compared to the impacts on symbolic performance, the effects of data consistency and shared values on substantive performance might be weaker (Heugens & Lander 2009; Meyer & Rowan 1977).

H3a: An organization's cognitive capital has positive effects on its substantive performance.

H3b: An organization's cognitive capital has positive effects on its symbolic performance

H3c: The effects of cognitive capital on substantive performance are weaker than on symbolic performance.

Finally, we propose that structural capital, in the form of IeSCI, could directly affect relational capital. Specifically, IeSCI could help develop relational capital by building trust, obligation, and guanxi (Wasko and Faraj 2005). The interconnected and synchronized processes would help firms to avoid misunderstanding, and clearly understand each other's purpose and strategies. Moreover, it is known

that cognitive capital positively influences relational capital. By using a common set of language, perception, and understanding between firms, firms would be easy to exchange ideas and opinion with each other, thereby reaching agreement and understanding about specific issues (Tsai and Ghoshal 1998). Meanwhile,

H4a: An organization's structural capital has positive effects on its relational capital.

H4b: An organization's cognitive capital has positive effects on its relational capital.

4. RESEARCH METHODS

4.1 Sample and data collection

We collected data using the designed questionnaire survey to test our proposed model. This survey is conducted in China. Our sampling frame is composed of 270 firms. For each firm in the sampling pool, we selected one senior executive as the key informant. These senior executives are at the top positions in firms, so they tend to have a more comprehensive view of their firms to answer all questions. We made follow-up emails and telephone calls to non-respondents after distributing the questionnaires to encourage response. Finally, we received 205 useful questionnaires. We estimated the non-response bias by virtue of the method suggested by (Armstrong & Overton 1977). Comparing the first 25% of respondents and the final 25% on the chi-squares of key measures of responses, we found that there were no significant differences between these two groups on these items, which demonstrated that non-response bias was not a key issue in this study. The demography of the samples is shown in Table 1.

Measure	Items	Frequency	Percentage
Ownership types	State-owned	68	43.31%
	Privately Owned	67	42.68%
	Foreign-controlled	11	7.01%
	Joint Venture	6	3.82%
	Others	5	3.18%
Industry types	Mechanical Equipment Manufacturing	20	12.74%
	Finance Industry	35	22.29%
	Wholesale and Retail Trade	9	5.73%
	IT Industry	11	7.01%
	Real Estate Industry	13	8.28%
	Construction Industry	12	7.64%
	Others	57	36.31%
Firm size	Less than 100	37	23.57%
	100-299	46	29.30%
	300-499	16	10.19%
	500-999	17	10.83%
	1000-1999	13	8.28%
	More than 2000	28	17.83%
Firm history	1-5 Years	25	15.92%
	6-10years	43	27.39%
	11-25years	61	38.85%
	26-50years	13	8.28%
	More than 51 Years	15	9.55%
IT department size	Less than 2	36	22.93%

	2-5	48	30.57%
	6-10	28	17.83%
	11-15	8	5.10%
	More than 16	37	23.57%

Table 1. Sample demographic

4.2 Measures

All measures used in our survey were adopted from previous established studies. The three social capital dimensions and the two firm performance types are defined as the second-order formative constructs. All the instruments on the English questionnaire were professionally translated into Chinese by four native Chinese speakers who are fluent in English and come from different majors. Afterwards, a professional translator helps us translated the Chinese questionnaire back into English. Comparing the translated English version with the original one, we found that there were no semantic discrepancies.

5. DATA ANALYSIS AND RESULTS

5.1 Common Method Bias

Since all data were perceptual and collected from a single source simultaneously, we checked the possible common method bias using Harman's one-factor test to get rid of the threat to the research validity. The results revealed that all the items can be categorized into six distinct factors with eigenvalues above 1.0, and account for 71.307% of the variance. The first factor didn't account for the majority of the variance (only 14.955%), which indicated that the common method bias was unlikely to be a major issue in our study.

5.2 Reliability and Validity

We employed confirmatory factor analysis (CFA) to assess the construct reliability and validity of the measurement. Specifically, we assessed the reliability of each construct following the guidelines outlined by (Fornell & Larcker 1981). The results showed that Cronbach's Alpha ranged from 0.75 to 0.92, and composite reliability ranged from 0.86 to 0.94. As shown in Table 2, these values of all constructs were higher than the benchmark of 0.700, which indicated the good reliability of the measurements.

Further, we tested construct validity via convergent and discriminant validity. The convergent validity was tested by the items' loadings and average variance extracted (AVE). As table 2 reports, the loadings of all items varied from 0.71 to 0.93 at a significance level of 0.001, and the AVE values ranged from 0.63 to 0.80, which were above the 0.500 recommended level. The results showed that the measures had satisfactory convergent validity. To assess the discriminant validity, we compared the relationship between the correlations among the constructs and their square root of AVEs. The data in Table 3 indicated that the square roots of AVEs for all constructs were higher than the correlations between constructs, which verified the discriminant validity of the measurement model.

As one inter-construct correlation in table 3 had value over the criteria of 0.60, we conducted a test to verify the potential threat of multicollinearity. Generally, if variance inflation factors (VIFs) are greater than 10 or tolerance values are less than 0.10, the existence of multicollinearity is proved (Mason & Perreault Jr 1991). The results of our study showed that the highest VIF was 2.077 and the lowest tolerance value was 0.482. Thus, multicollinearity did not appear to be a significant problem in our study.

Second-order	First-order	Loadings range	Cronbach's Alpha	Composite Reliability	AVE
Cognitive capital	Data consistency	0.78-0.88	0.84	0.90	0.68
	Shared values	0.83-0.88	0.82	0.89	0.73
Structural capital	Customer integration	0.78-0.83	0.82	0.88	0.65
	Internal integration	0.71-0.84	0.80	0.87	0.63
	Supplier integration	0.78-0.86	0.75	0.86	0.67
Relational capital	Affective trust	0.87-0.91	0.86	0.92	0.78
	Cognitive trust	0.85-0.90	0.86	0.91	0.78
	Business ties	0.78-0.84	0.82	0.88	0.65
	Political ties	0.87-0.91	0.87	0.92	0.79
	Commitment	0.87-0.90	0.86	0.91	0.78
Substantial performance	Business performance	0.80-0.89	0.92	0.94	0.72
	Operational performance	0.78-0.84	0.89	0.91	0.64
Symbolic performance	Regulatory endorsement	0.85-0.93	0.88	0.93	0.81
	Media endorsement	0.87-0.92	0.87	0.92	0.80
	Agency ratings	0.80-0.87	0.87	0.91	0.72

Table 2. Results of Confirmatory Factor Analysis (CFA).

Table 3.   Mean, standard deviation, and correlation

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Data consistency	3.15	0.91	0.83														
2. Shared values	3.57	0.78	0.48	0.86													
3. Customer integration	3.43	0.78	0.52	0.67	0.81												
4. Internal integration	3.38	0.78	0.38	0.46	0.51	0.80											
5. Supplier integration	3.50	0.75	0.45	0.50	0.64	0.52	0.82										
6. Affective trust	3.66	0.77	0.35	0.59	0.59	0.37	0.50	0.88									
7. Cognitive trust	3.66	0.81	0.37	0.58	0.59	0.35	0.50	0.79	0.88								
8. Business ties	3.64	0.77	0.42	0.54	0.59	0.48	0.53	0.58	0.55	0.81							
9. Political ties	3.65	1.00	0.25	0.30	0.40	0.30	0.33	0.34	0.26	0.55	0.89						
10. Commitment	3.85	0.80	0.34	0.55	0.55	0.39	0.42	0.67	0.63	0.60	0.37	0.88					
11. Business performance	3.64	0.80	0.43	0.49	0.53	0.43	0.42	0.39	0.34	0.50	0.45	0.47	0.85				
12. Operational performance	3.66	0.76	0.38	0.51	0.56	0.54	0.48	0.58	0.56	0.54	0.32	0.62	0.51	0.80			
13. Regulatory endorsement	3.55	1.00	0.34	0.41	0.41	0.43	0.38	0.44	0.35	0.51	0.49	0.42	0.49	0.44	0.90		
14. Media endorsement	3.67	0.97	0.29	0.37	0.37	0.35	0.36	0.42	0.36	0.50	0.53	0.41	0.44	0.37	0.73	0.89	
15. Agency ratings	3.64	0.88	0.37	0.50	0.51	0.43	0.43	0.46	0.35	0.55	0.49	0.47	0.54	0.50	0.78	0.74	0.85

*. Correlation is significant at the 0.05 level (2-tailed).

Table 3. Assessment of discriminant validity

5.3 Hypothesis testing

Given that all the constructs in the model are formative constructs, we used the partial least squares (SMARTPLS) analysis technique to test the research model. Fig. 2 presents the results of the structural model, which includes the R2 of endogenous variables and the structural path coefficients and their significance. The model explained 39 to 56 percent of the variances.

The results showed that H1a and H1b which demonstrated the relationship between structural capital and substantive performance (β=0.32, p<0.01), and symbolic performance (β=0.22, p<0.05) were supported. Meanwhile, through comparing these two path coefficiences, the results present that structural capital has stronger influences on substantive performance than on symbolic performance. Yet, the results presented that cognitive capital did not influence firm performance significantly (β=0.073), thereby H1 was not supported. For IT capabilities, the results presented that IT

infrastructure capability positively impact structural capital (β=0.297, p<0.01) and relational capital (β=0.223, p<0.05), which supported H4a and H4b. However, we did not find the positive and significant relationship between IT infrastructure capability and cognitive social capital (β=-0.03), therefore H4c was not supported. Further, the results showed that external IT linkages had a positive effect on cognitive capital (β=0.323, p<0.001) and relational capital (β=0.267, p<0.01), as anticipated in H5b and H5c. Yet, external IT linkages did not have a significant influence on structural capital (β=0.098), thereby H5a was not supported. Moreover, consistent with H6c, IT business partnerships had a positive effect on cognitive capital (β=0.177, p<0.05). But, IT business partnerships did not impact structural capital and relational capital (β=0.009, -0.046 respectively) significantly, which did not support H6a and H6b. Table 4 summarized the results of hypothesis testing.
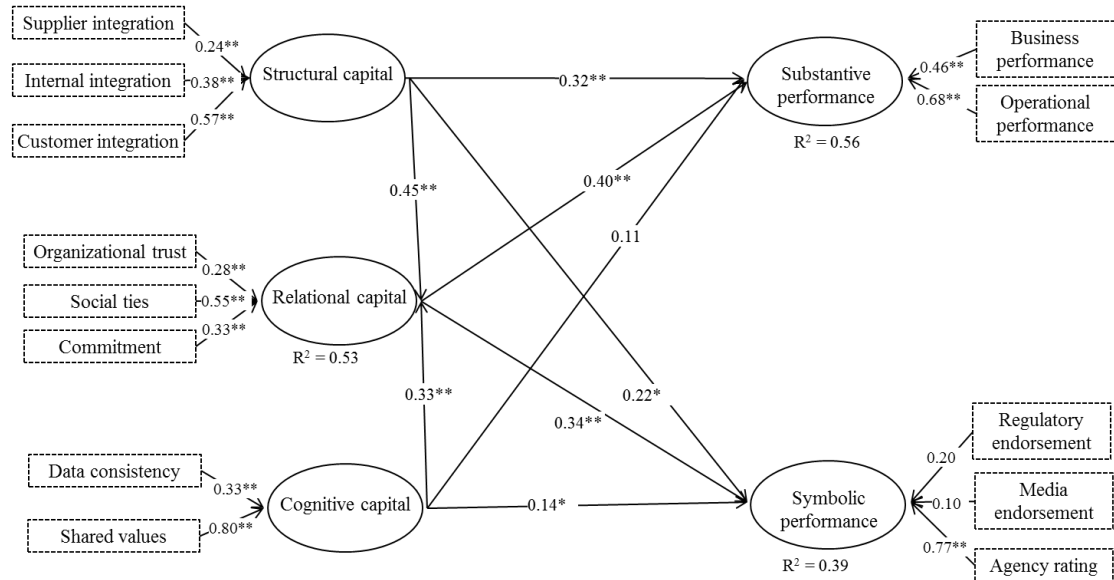
Note: * p< 0.05, ** p<0.01, and *** p<0.001.

Figure 2.   The results of the structural model.

H1a: An organization's structural capital has positive effects on its substantive performance	β=0.32, p<0.01	Supported
H1b: An organization's structural capital has positive effects on its symbolic performance	β=0.22, p<0.05	Supported
H1c: The effects of structural capital on substantive performance are stronger than on symbolic performance.	Δβ=0.10, p<0.01	Supported
H2a: An organization's relational capital has positive effects on its substantive performance.	β=0.40, p<0.01	Supported
H2b: An organization's relational capital has positive effects on its symbolic performance	β=0.34, p<0.01	Supported
H2c: The effects of relational capital on substantive performance are weaker than on symbolic performance.	Δβ=0.06, p<0.01	Supported
H3a: An organization's cognitive capital has positive effects on its substantive performance.	β=0.11, p>0.05	Not supported
H3b: An organization's cognitive capital has positive effects on its symbolic performance	β=0.14, p<0.05	Supported
H3c: The effects of cognitive capital on substantive performance are weaker than on symbolic performance.	Δβ=-0.03, p<0.05	Supported
H4a: An organization's structural capital has positive effects on its relational capital.	β=0.45, p<0.01	Supported

H4b: An organization's cognitive capital has positive effects on its relational capital.	β=0.33, p<0.01	Supported

Table 4. Results of hypothesis testing

6. DISCUSSION AND CONCLUSIONS

6.1 Discussion

Our findings on the relationship between social capital and firm performance are not only consistent with prior research, but also offer some new empirical findings about the role of social capital in driving a firm's symbolic performance. Specifically, the results suggest that structural and relational capital could influence substantial and symbolic performance significantly. The results further showed that structural capital has stronger influence on substantive performance than on symbolic performance. These findings are consistent with previous research. Meanwhile, in consistent with our hypotheses, the results presented that the effects of relational capital on substantive performance are stronger, rather weaker than on symbolic performance.

On the other hand, the results presented that cognitive capital has differential effects on these two types of performance. That is, cognitive capital could not impact substantive performance significantly, but can influence symbolic performance significantly. One possible explanation for this finding may be that cognitive capital associated with shared vision is much more enduring and sustained, comparing with the other two dimensions of social capital (Villena et al. 2011). In this view, cognitive capital may be less malleable and can't be directed to improve substantial performance obviously, but it is still an important factor for improving symbolic performance.

6.2 Implications and Limitations

Evaluating the contributions along with its limitation is of primary importance, which can be addressed in future research. First, we used cross-sectional data from survey responses provided by single respondent. Given that social capital accumulation is gradual processes, the longitudinal study may be more appropriate for exploring the interrelationships between social capital and firm performance at different stages considering the time issue. Also, a multi-respondent survey would help avoid the bias in our sample and enhance the robustness of the research results. Third, we conducted this study only within the context of China and chose informants. Future researches can extend the findings of the current research to other contexts.

The main theoretical contributions of our study lie in the following aspects. First, the current research enriches social capital research in the context of e-business. The findings indicate the open standards and communication platform make the role of cognitive capital is not important for substantial performance improvement in the e-business context. Second, this study extends our understanding of the underlying causal mechanisms between social capital portfolios and two firm performance. Our findings show that the different dimensions of social capital have different influence on substantial and symbolic performance. The findings extend our understanding about the multi-dimensional relationships between social capital and firm performance. Our study also has several implications for practitioners. First, the findings provide some guidelines for mangers who try to benefit from building social capital in the e-business context. We suggest that managers should notice that the different social capital would play various role in improving substantial and symbolic performance. Meanwhile, they should pay attention to the interrelationship between organizational structural, cognitive and relational capital.

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