A Meta-Analysis on the Impact of Social Capital on Firm Performance in China's Transition Economy

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Abstract: There is almost no research consensus on the influence of social capital on firm performance in China, which motivates our study in this paper. Our research aim here is to identify the effect of contextual and methodological moderators on the relationship between social capital and firm performance in China's transition economy. Meta-analysis is employed to explore the impact of social capital on firm performance and to identify moderators affecting the relationship based on 106 independent studies between 2008 and 2018. The results demonstrate that the social capital–performance link is positive and significant in China. Particularly, social capital has a stronger positive relationship with performance in high-tech industries or in low-level marketization. Meanwhile, the social capital–performance link depends on the specific performance measures and dimensions. The paper clearly indicates the value of cultivating social capital and reveals that distinct types of social capital are needed at different points in different industries and market areas.

1. Introduction

Under the complex and volatile conditions, the life cycle of products and business models is further shrinking, which causes high uncertainty in an enterprise's profits models. Regarded as resources that can enhance the adaptation of firms and even manage contextual uncertainty of enterprises, social capital enables entrepreneurs to identify opportunities [1], mobilize resources [2], and to build legitimacy for their firms [3]. Therefore, social capital brings a competitive advantage to the enterprises and becomes the main force in enhancing firm performance [4,5]. Despite this surge of interest, little consensus is reached about the impact of social capital on firm performance [6–8], and this continues to exist due to the difference in definitions, research designs, and sampling contexts across prior studies, which motivates our study in this paper.

As is well known, certain institutional background is needed to analyze the social capital theory. Most studies on social capital in the Western context are conducted in a relatively pure and mature market economy. However, little is known about the increasing importance of social capital for firms in emerging economies [9,10], and research consensus is not reached. Compared to the developed economies, emerging economies are characterized by social and economic transformations. At present, China, as one of the largest emerging markets, is experiencing an institutional change from central planning into market competition [11–13]. There are big differences in business administration and the operating situation between Western countries and China. Therefore, current studies about social capital in the Western context cannot be simply applied to China. What is the role of social capital on firm performance in China's transition economy? Which form of social capital can enhance business performance? What are the moderators in the relationship between social capital and firm performance?

These have been hot topics in Chinese academia and business circles. Therefore, identifying the relationship between social capital and firm performance in China becomes significant and vital.

Despite the surge of studies focused on social capital, little agreement exists about whether social capital will promote a firm's performance or not. Similarly, little consensus exists concerning the social capital–firm performance link in China's economic transformation. For example, previous studies showed that social capital has both a direct positive influence and a indirect influence on firm performance by absorptive capacity [14], product innovation capability [15], resource integration capacity [2], and so on. Nevertheless, other studies find the social capital–performance relationship either non-significant or negative. For example, Li and Yang (2012) [9] focused on the dark sides of social capital and investigated the negative effects of social capital on innovation performance based on Chinese enterprise data. Park and Luo (2001) [10] revealed mixed empirical results showing that, although social capital leads to sales growth, it has little effect on profit growth. In addition, they found that social capital benefits market expansion and firms' competitive positions, but fails to enhance internal operations.

Therefore, the influence mechanism of social capital on firm performance in China's transition economy is not clear. Besides, current studies lack a sufficient and deep analysis of the role of social capital on firm performance. The majority of scholars do not offer systematical discussion on how different dimensions and types of social capital influence firm performance. Moreover, ambiguity and fragmentation exist about the contextual contingencies that influence the timing of certain dimensions and types of social capital, which are most beneficial for firm performance. In addition, few scholars study contingencies in the social capital–firm performance relationship, which embodies the characteristics of China's economic transformation. The main contribution of this paper can be summarized as follows.

We firstly present the definition, dimensions, and types of social capital, as well as the definition and dimensions of firm performance for subsequent data analysis. Then, by collecting the number of empirical studies that discuss the impact of social capital on firm performance, we find some theoretical moderators, such as ownership structure, industrial type, and marketization process, which may influence the relationship between social capital and firm performance and embody the characteristics of China's economic transformation. At the same time, methodological moderators are recognized based on performance dimensions and measures. Finally, the study model for meta-analysis is constructed by combining these factors.

We employ a meta-analysis method to evaluate existing empirical evidence quantitatively and thus to overcome the theoretical debates. We obtain a more precise estimate of the social capital–firm performance link in China's transition economy by synthesizing related research results with this method. In addition, meta-analysis can identify the effects of contextual and methodological moderators on the social capital–firm performance link. Hunter and Schmidt (2004) [16] argued that meta-analysis can facilitate theory development because it enables researchers to examine hypotheses that are not testable in primary studies. Accordingly, our meta-analysis chooses ownership structure, industrial type, and marketization process as theoretical moderators, which can reflect the characteristics of economic transformation in China to some extent, while it has received little empirical interest. Besides, meta-analysis can identify methodological moderators that may account for part of the mixed results in the literature [17]. We clarify how methodological choices may influence research findings by comparing effect sizes across performance measures and performance dimensions.

Our study in this paper has important theoretical and practical implications. For the theoretical part, by synthesizing cumulative findings and uncovering new moderators, results of meta-analysis demonstrate that the social capital–performance link is positive and significant in China's transition economy. Particularly, social capital has a stronger positive link with performance in high-tech industries or in low-level marketization. The social capital–performance link depends on the specific performance measures and dimensions. Therefore, our study can provide new evidence to overcome the debate about the impact of social capital on firm performance, which contributes to the understanding

of the role of social capital in China's economic transformation and reveals how definitions, research designs, and sampling contexts across prior studies may influence results, i.e., our study can provide valuable recommendations for future research on social capital in a transition economy. For the practical part, our study clearly indicates the value of cultivating social capital and reveals that distinct types of social capital are needed at different points in different industries and areas for administrators.

2. Theory and Hypotheses

2.1. Definition, Dimensions, and Types of Social Capital

The concept of "social capital" comes from the concept of "capital" in the economic field. In the economic field, capital is a resource for investment or mobilization in pursuit of economic goals. It can be used as a productive element, as well as a production result. In the 1950s, the concept of "human capital" was first proposed to expand the concept of "capital" from a concrete material level into an abstract one. At this point, although economists focus on "people", "people" here are not the "people" in certain social relations. In fact, "people" is both the resources and the carriers that consume resources. In addition, human resources theory not only ignores human beings' main body of the existence—social relations in utilizing resources—but also ignores the impact of social relations on the economy. Therefore, after the 1970s, Western sociologists put forward the concept of "social capital", which integrates social relations and social structure into the category of capital analysis, thus effectively describing the significance of social capital to the economic system [18], and making up for the defects and shortcomings of the human resources theory. As is well known, in addition to human capital and material capital, the social resources owned by the behavioral subjects, i.e., social capital, can also enter into the productive field as a very important element of production, and play an irreplaceable role in socio-economic activities.

For now, there is a lack of consensus on a precise definition of social capital [19]. The current definitions of social capital are categorized into several views. The first view, the resource view, regards social capital as a resource that is embedded in social networks. Nahapiet and Ghoshal (1998) [19] defined social capital as the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit. The second view is the networking view. Social capital is defined as various relationship networks that facilitate actions between individuals and organizations, which can create value. Some scholars even believe that individual–organizational social capital equals to a specific individual–organizational social network and explain the impact of structure characters of social network on actors, such as [18]. By contrast, Coleman (1990) [20] described social capital based on its function. He asserted that social capital is a variety of entities that can facilitate certain actions of actors who are within the social structure. Putnam (1995) [21] (p. 67) described social capital as "*features of social organization such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit*". Both of them are regarded as bonding views, which focus on features that give collectivity cohesiveness and, thereby, facilitate the pursuit of collective goals. To address the lack of consensus, Adler and Kwon (2002) [22] defined social capital as the goodwill available to individuals or groups. Its source lies in the structure and content of the actor's social relations. Its effects flow from the information, influence, and solidarity that it makes available to the actor. Therefore, we define social capital as features that are embedded in social individuals or organizations such as network relationships, norms, and trust that facilitate coordination and cooperation for mutual benefit.

Social capital exists in different dimensions [23]. Nahapiet and Ghoshal (1998) [19] categorized social capital into three interrelated dimensions: structural, relational, and cognitive aspects. The structural dimension refers to a general pattern of connections among actors. The relational dimension signifies properties that root in relationships such as trust and trustworthiness. The cognitive dimension denotes the resources offering shared interpretations, representations, and systems of meaning of actors. To understand social capital more systematically, social capital is divided into several types

from many perspectives. With regard to the existing place of social capital, it includes external and internal social capital. The former existing externally to enterprises contains social relationships, trust and reciprocity, and the common language between enterprises and other organizations [24,25]. The latter existing internally in enterprises contains trust and cooperation between firm members, common goals of staff contributing to communication and coordination, and interpersonal relationships that enhance cohesion.

At present, there are more studies regarding external social capital than internal social capital. From the perspective of stakeholders, strategic management research distinguishes between social capital (known as "Guanxi" in Chinese) with government officials and social capital with managers at other business firms [10,26]. Relationships with the former group are vertical, which are between government departments, industry management departments, and coordinate support organization, while those in the latter group are horizontal, which are between supplier and customer, even competitors [22]. Hence, social capital can be divided into institutional social capital and business social capital.

2.2. Firm Performance

The concept of firm performance lies at the heart of the strategic management literature. Venkatraman and Ramanujam (1986) [27] divided firm performance into financial performance, which indicates the achievement of the firm's economic goals, and non-financial performance. Zahra (1996) [28] suggested that growth and profitability could identify distinct facets of firm performance. Chih (2016) [29] classified firm performance into financial performance, customer performance, and business performance. Stam et al. (2014) [7] advocated that firm performance consisted of growth, profitability, and nonfinancial performance. Growth measures contain objective or perceived growth in sales, profit, employment, and market share. Measures of profitability contain accounting-based indicators such as return on assets, return on equity, as well as self-reported assessments of profitability. Non-financial performance contains various indicators of operational effectiveness such as technology innovation, competitive capabilities, knowledge transfer performance, and so on. Therefore, three dimensions (growth, profit, and non-financial) are incorporated into our meta-analysis study. Besides, we also classify studies into two types. The first type uses objective, qualitative measures, and the second one uses subjective measurement scales.

2.3. Social Capital and Firm Performance

Social capital is an important source for the creation of the inimitable value-generating resources that are inherent in a firm's network of relationships [30]. At present, China is in the transforming phase, where the formal restrains of the planning system is becoming weak. For Chinese enterprises, the lack of formal institutions is an important challenge. However, institutional theory points out that informal restrain would play a key role in the normative economic exchange without formal institutions. Thus, in China's transition economy, as a supplement of formal restrain, social capital reduces the bad impact of cutthroat competition and incomplete patent system and becomes an important source of an enterprise's strategic base and competitive advantage [31,32]. Moreover, resources are embedded in external relationship networks during the transforming phase of China. As approaches and "credit vouchers" of enterprises to communicate with the outside world, social capital makes enterprises obtain privileges, contacting information, and opportunities. Thus, most scholars believe that social capital becomes an essential vessel for enterprises to get and take advantage of resources [33], and that the strategy based on social relationships is the best surviving and developing strategy that Chinese enterprises can adopt [10,34].

Based on the aforementioned discussions, we obtain the first hypothesis in our study.

Hypothesis 1. *Social capital relates to firm performance in transition economies positively.*

2.4. Exploratory Theoretical Moderators

The divergent and sometimes conflicting empirical results on the effects of social capital motivate the following question: Do any moderators between social capital and firm performance in China exist? A few possible moderators have been theorized, but there is short of empirical evidence, and thus the characteristics of transition economy fail to be embodied [2]. In order to select suitable moderators, we only include those that embody the characteristics of a transition economy and have been subject to some debates in the literature. Based on the principle, we propose that ownership structure, industrial type, and marketization process can act as such moderators.

2.4.1. Ownership Structure

Despite ongoing attempts to decentralize government control and facilitate market transactions, China's economic reform remains currently incomplete, with a mix of both planned and market systems. Business activities still depend on administrative interference rather than on the market mechanism to a large extent.

In economic transition, different ownership types may have different influences on the pattern in which enterprises obtain their social capital and improve their performance. Private firms have grown quickly, while they largely depend on their "Guanxi" as social capital, because "Guanxi" involves exchanges of social obligation and asking-and-giving of favors, which are important symbols of social capital [10]. Particularly, "Guanxi" with government has become the lifeblood of business exchange in transition economy [35], where the interdependence between business organizations and government agencies remains very high [36]. Their survival depends on the unreliable market rules of the game set by the government. Facing with ineffective factor markets, private enterprises positively build political relationships with the government and cultivate social capital. The more abundant social capital that private firms accumulate through relationships with the government, the more possibility by which they can break through barriers and enter into new industries and areas.

Therefore, social capital represents an important source of competitive advantages for private enterprises [37]. Park and Luo (2001) [10] asserted that institutional impacts are manifested in ownership structure, and non-state-owned firms are more likely to form social capital than state-owned firms in a transition economy. Moreover, Xin and Pearce (1996) [38] concluded that private enterprises had more preference for social capital than state-owned enterprises. The aforementioned discussions motivate the following hypothesis in our study.

Hypothesis 2. *Social capital is related to performance for private firms more positively than state-owned firms in China's transition economies.*

2.4.2. Industrial Type

In a transition economy, the industrial context of firms may importantly influence whether social capital enhances firm performance [33]. High-tech industries and low-tech industries differ greatly in information requirements, resources investments, and industry environments.

In the high-tech industry, faced with dual dilemmas from both technology and the market, firms derive competitive advantages from superior capabilities to quickly respond to rapid changes in markets and technologies [39,40]. In a fast-moving and information-intensive environment that typifies high-tech industries, social capital ensures balanced exposure to information of new products and technologies [41,42] and facilitate alertness to emerging threats and opportunities [42]. In addition, high-tech firms derive their competitive advantages from innovation ability, which means novel recombination of various resources. Abundant social capital offers high-tech enterprises greater opportunities to get access to diversified knowledge, which can change their present cognition construction and reconfigure their resources to fit with changes in the environment [43]. Rowley (2000) [44] pointed out that social capital could promote high-tech firms to operate effectively in a dynamic and uncertain environment. In contrast, in low-tech industries where innovation has little

effect on firm performance, the cost of cultivating social capital may outweigh the benefits generated from social capital. The aforementioned discussions motivate the following hypothesis in our study.

Hypothesis 3. *Social capital is related to performance for firms in high-tech industries more positively than in low-tech industries in China's transition economies.*

2.4.3. Marketization Process

In China, regional economic development and the marketization process are quite unbalanced. Considering the "beforehand affect" of market environments in building enterprises' competitive advantage, the marketization process is taken as a moderator to enhance the understanding of the relationship between social capital and firm performance. The marketization process refers to the degree that the market plays a part in resource allocation, which can generalize the progress from a planned economy system to a market economy system of a transition country [45].

Compared with high-level marketization regions, low-level ones are characterized by higher instability of market information and not fully-established market mechanism [46,47]. Since the absence of a reliable government and established rules leads to high cost and uncertainty in market transactions, entrepreneurs in low-level marketization should cultivate personal networks to procure resources and protect their firms from arbitrary extortion or expropriation [38].

Institutional inefficiency facilitates firms' demand for informal transaction institutions and intensive networks [48]. Therefore, firms in low-level marketization want to make use of social capital to effectively monitor and rationally control business partners [49], as well as countervail uncertainty associated with unpredictable government regulation or increasing competitive intensity. By contrast, political, economic, and regulatory institutions are often stronger and better enforced in high-level marketization, which reduces entrepreneurs' need for network governance. The aforementioned discussions motivate the following hypothesis in our study.

Hypothesis 4. *Social capital is related to performance for firms in low-level marketization more positively than those in high-level marketization in China's transition economy.*

2.5. Exploratory Methodological Moderators

When meta-analysis is used, the characteristics of original studies (e.g., measure and method) can be regarded as potential moderators. We examine performance measures and performance dimensions as potential sources of the social capital–performance variations through studies. As for performance measures, it is possible that subjective scales vs. objective quantified measures could be a source of social capital–performance variation [27]. Besides, the relative magnitude of effects of social capital may depend on the choice of the performance dimensions, such as growth, profit, and non-financial forms. Therefore, we explore two methodological characteristics as potential moderators of the relationship between social capital and firm performance: performance measure (subjective scale vs. objective quantified) and performance dimension (growth vs. profit vs. non-financial).

Figure 1 summarizes the overall conceptual model. It is important to note that the different dimensions and types of social capital are incorporated into the analytical model in order to make better sense of the relationship between social capital and firm performance.
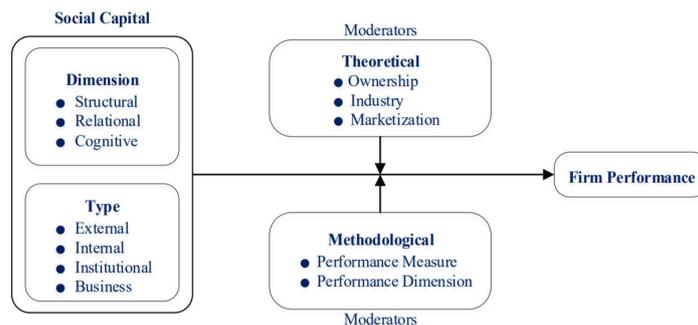
Figure 1. The meta-analysis Model.

3. Data and Methods

3.1. Search Strategy and Inclusion Criteria

To collect empirical studies that considered the social capital–firm performance link, we refer to the following databases (ABI/INFORM, Elsevier Science, EBSCO, JSTOR, SPRINGER LINK, and CNKI) over period from 2008 to 2018, using different combinations of keywords related to social capital, relationship capital, context (e.g., high-tech industries, state-owned enterprises) and performance outcomes (e.g., firm growth, firm performance). To ensure the quality of the literature, literature in CNKI were limited to trustworthy management journals identified by Chinese National Natural Science.

To be included in our meta-analysis, studies have to meet three criteria. First, we only considered studies examining Chinese enterprises. Second, studies have to report a correlation coefficient. Third, to address the problem of conceptual replication, we ascertain that studies are independent and have no overlapping samples. Finally, we obtain a total of 106 primary studies involving a total of 26,854 observations.

3.2. Coding and Measures

3.2.1. Social Capital

First, as with the characteristic dimension, we included studies considering that social capital consists of structure, relationship, and cognitive dimension. Next, considering the types of social capital, we classified studies into those examining external and internal social capital. Besides, external social capital can be divided into institutional and business social capital [10,26]. Moreover, based on other perspectives, some studies have a general description of social capital, such as network status and relationship strength. As a matter of convenience, those studies are classified as the same type.

3.2.2. Theoretical Moderators

First, we coded studies according to the sampled ownership structure. We classified firms as state-owned and private enterprises. Next, we coded studies according to the sampled industries. Sectors classified as high-tech industries contain biotechnology, internet, software, electronics, computer equipment, and technology consulting services. Low-tech industries contain manufacturing, logistics industry, banking, and retailing. Finally, we coded studies according to the marketization process. The marketization index analyzed by Fan and Wang (2005) [45] is considered as a standard to measure the level of marketization. We classified studies into those whose marketization index on average was less than 7.00 and those whose marketization index on average was more than 7.00 (Table 1). Although the marketization index after 2010 has not yet been released, we still used Fan's overview because it provides a consistent and widely-accepted definition over time.

Table 1. The average of the marketization index (2000–2017).

Province	Average	Province	Average	Province	Average	Province	Average
Zhejiang	9.157	Chongqing	6.774	Hunan	5.835	Yunnan	4.730
Shanghai	9.009	Liaoning	6.741	Jilin	5.713	Ningxia	4.436
Guangdong	8.794	Anhui	6.427	Guangxi	5.628	Guizhou	4.277
Jiangsu	8.736	Hubei	6.184	Hainan	5.441	Gansu	3.901
Beijing	8.029	Henan	6.166	Heilongjiang	5.347	Xinjiang	3.644
Fujian	7.669	Sichuan	6.158	Shaanxi	4.926	Qinghai	2.768
Tianjin	7.874	Jiangxi	5.878	InnerMongolia	4.903	Tibet	1.101
Shandong	7.314	Hebei	5.849	Shanxi	4.831		

3.2.3. Methodological Moderators

To estimate whether the social capital–firm performance relationship varies across construct measurement design, studies were coded in two ways. First, we classified studies into those using growth dimensions, profit dimensions, and nonfinancial dimensions. Second, we coded whether the studies used objective, quantitative measures or used subjective measurement scales.

3.3. Meta-analysis Procedures

We adopt the meta-analysis procedures developed by Hunter and Schmidt (1990) [16]. The sample-weighted average effect size (R_w) was computed based on the Pearson product–moment correlations (R) reported by each study and the study's sample size. Whenever studies reported multiple correlations, we combined them into a single correlation. We divided R by the product of the square root of the reliabilities of two constructs involved and then weighted each by its associated sample size to yield a corrected effect size (R_c), which is to correct for measurement error [50]. Whenever a study did not indicate a reliability estimate for either social capital or firm performance, we used the mean of available alphas across the sample to reconstruct the missing reliabilities [16]. To facilitate hypothesis testing, we then calculated the 95% confidence interval around R_w. If the lower boundaries of the 95% confidence intervals are greater than zero, effects are significant [51].

To estimate the severity of publication bias, we conducted "file drawer" analysis according to Rosenthal (1979) [52], which calculates the number of unpublished studies (fail-safe N) with null results needed to render each mean effect size statistically insignificant. As shown in Table 2, all fail-safe N values exceeded Rosenthal's criterion (i.e., 5 * number of studies + 10).

Several steps are followed to test moderator hypotheses, as recommended by Cortina (2003) [53]. We examine the homogeneity of each correlation by applying the 75% rule [16] and chi-squared test (Q-statistics [54]. If more than 75% of the observed variance is explained by sampling error variance, effects are considered to be homogenous, which indicates that moderators are not likely to exist. Besides, we use the chi-squared test to examine the presence of moderators. The chi-squared test is used to calculate Q-statistics, which is chi-square distribution based on total square error of mean effect size. If observed variation within the mean effect size is significantly greater than sampling error variation, it indicates that potential moderator variables that can account for residual variation are likely to be present.

We tested the significance of the hypothesized moderating effects using bivariate subgroup analysis, which is well suited for categorical moderators [55]. To examine the statistical significance of the difference between-group differences in R_c, we calculated z-statistics. Furthermore, when the moderator subgroups' variance explained by sampling error is lower than the variance of the overall effect, it indicates a moderation effect [16].

Following the previous meta-analysis, we provided meta-analysis estimates when at least three independent effect sizes were available.

4. Results

4.1. Main Effects of Social Capital on Firm Performance

Hypothesis 1, which proposes a positive overall influence of social capital on firm performance in China, cannot be rejected based on our results (Table 2). R_c is 0.244, which, according to Cohen (1988) [56], can be considered as moderately large. Moreover, the boundaries of the 95% confidence interval are 0.164 and 0.250, indicating that the overall effect is significant. File drawer analysis indicates a required number of 10,388 studies with zero effects to make the effect insignificant. Because the percent of variance due to sampling error (9.67%) is below 75% needed for assuming homogeneity, heterogeneity of the effects for the overall relationship is exhibited which points to the existence of moderating variables. Besides, Q-statistics also indicates the presence of moderators.

Next, we report the disaggregated correlations between different dimensions or types of social capital and firm performance. The results consistently report positive effect sizes of each dimension and type: structure dimension ($Rc = 0.305$), relationship dimension ($Rc = 0.365$), and cognitive dimension ($Rc = 0.341$); internal social capital ($Rc = 0.314$) and external social capital ($Rc = 0.221$); institutional social capital ($Rc = 0.103$) and business social capital ($Rc = 0.129$). For each effect size, the confidence interval did not include zero, thus confirming that it is statistically significant.

Homogeneity analysis of each effect size indicates that the sampling error variances for the individual dimension or type of social capital were all well below 75% (Table 2). This finding, together with the Q-statistics, indicate that there are moderators likely to influence the relationship between each dimension or type of social capital and firm performance.

Table 2. Results of meta-analysis on social capital and firm performance.

Variable	K	N	R_W	R_C	Se^2	Sr^2	% Variance Due to Sampling Error	95% Confidence Interval	Q Statistic x^2	Fail-Safe N
Overall relationship	106	26845	0.199	0.244	0.004	0.043	9.67%	(0.164,0.250)	1123.202 ***	10388
Structure dimension	28	7017	0.260	0.305	0.004	0.029	12.91%	(0.180,0.343)	209.092 ***	2769
Relationship dimension	36	8062	0.312	0.365	0.004	0.032	12.25%	(0.251,0.381)	327.572 ***	6520
Cognitive dimension	29	7129	0.286	0.341	0.004	0.042	8.82%	(0.189,0.359)	350.733 ***	3488
External social capital	80	21147	0.185	0.221	0.003	0.037	9.53%	(0.173,0.262)	850.491 ***	4453
Internal social capital	21	6345	0.267	0.314	0.003	0.044	7.22%	(0.192,0.392)	363.424 ***	2837
Institutional social capital	19	4169	0.103	0.130	0.005	0.027	20.68%	(0.049,0.193)	68.796 ***	185
Business social capital	17	3790	0.129	0.150	0.005	0.023	23.50%	(0.070,0.211)	49.160 ***	217

Note: K = number of samples in which relationship was estimated; N = cumulative N for all k studies; Rc = reliability corrected and sample size weighted mean effect size; Rw = sample size weighted mean effectsize; Sr^2 = variance in effect sizes, Se^2 = sampling error variance; 95% confidence interval = confidence interval around the mean correlation; Q statistic X^2 = a chi square test at k-1 degrees of freedom to assess whether variance is homogeneous; Fail-safe N = the number of unknown or unpublished studies of the same relationship with a true effect size of 0 that it would take to widen the reported 95% confidence interval enough to include zero; † $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, two-tailed test.

4.2. Theoretical Moderator Analysis

4.2.1. Ownership Structure

As shown in Table 3, the confidence interval for State-owned enterprises includes zero, which indicates that it is not statistically significant. Although the positive effect size of social capital is higher for private enterprises ($Rc = 0.169$) than state-owned enterprises ($Rc = 0.150$), the difference is not statistically significant ($Z = 0.190$, n.s.). Therefore, **Hypothesis 2** is rejected. Since the number of studies about ownership structure is limited, we cannot estimate the moderating effect of ownership structure in the relationship between individual dimension or type of social capital and firm performance.

Table 3. Results of bivariate theoretical moderator analysis.

Social Capital Variable	K	N	R_W	R_C	Se^2	Sr^2	% Variance Due to Sampling Error	95% Confidence Interval	Q Statistic x^2	Z-Score
Ownership Structure [a]										
State-owned	3	625	0.125	0.150	0.005	0.049	11.33%	(−0.706,1.152)	47.586 ***	0.190
Private	9	4739	0.134	0.169	0.002	0.019	10.01%	(0.018,0.309)	100.132 ***	
Industrial Type [a]										
Low-tech	22	5484	0.195	0.236	0.004	0.029	13.47%	(0.134,0.300)	153.639 ***	1.644 †
High-tech	20	4074	0.257	0.312	0.004	0.026	15.89%	(0.214,0.411)	135.548 ***	
External social capital *Low-tech	22	5484	0.195	0.236	0.004	0.027	14.18%	(0.134,0.300)	185.480 ***	0.933
External social capital *High-tech	12	2447	0.244	0.300	0.004	0.021	21.96%	(0.127,0.447)	74.469 ***	
Internal social capital *low-tech	3	699	0.172	0.208	0.004	0.036	11.028%	(−0.382,0.794)	30.464 ***	0.611
Internal social capital *High-tech	6	1518	0.193	0.221	0.004	0.008	43.93%	(0.106,0.458)	26.391 ***	
Structure dimension *Low-tech	6	1164	0.205	0.230	0.005	0.054	8.74%	(0.019,0.391)	35.947 ***	1.146
Structure dimension *High-tech	11	2714	0.256	0.317	0.004	0.027	13.14%	(0.154,0.358)	90.288 ***	
Relationship dimension *Low-tech	9	1854	0.317	0.387	0.004	0.015	26.59%	(0.238,0.396)	31.861 ***	1.047
Relationship dimension *High-tech	14	3041	0.305	0.357	0.004	0.032	12.17%	(0.274,0.464)	128.091 ***	
Cognitive dimension *Low-tech	5	1013	0.284	0.340	0.004	0.034	12.11%	(0.121,0.447)	40.103 ***	0.201
Cognitive dimension *High-tech	11	2721	0.228	0.292	0.004	0.034	10.84%	(0.114,0.342)	115.799 ***	
Marketization Process [a]										
Low-level	7	2094	0.374	0.448	0.002	0.024	10.15%	(0.235,0.575)	89.550 ***	2.344 *
High-level	36	6888	0.194	0.237	0.005	0.034	14.02%	(0.160,0.300)	214.753 ***	
External social capital *Low-level	7	2094	0.374	0.448	0.002	0.022	10.36%	(0.235,0.575)	89.550 ***	2.636 **
External social capital *High-level	30	6368	0.187	0.227	0.005	0.021	22.25%	(0.142,0.277)	150.250 ***	
Structure dimension *Low-level	3	716	0.311	0.353	0.003	0.024	13.70%	(0.158,0.464)	19.300 ***	0.307
Structure dimension *High-level	6	1039	0.211	0.256	0.006	0.088	6.68%	(0.050,0.472)	90.342 ***	
Relationship dimension *Low-level	3	716	0.399	0.460	0.007	0.045	14.49%	(0.260,0.538)	9.597 **	1.531
Relationship dimension *High-level	10	1545	0.231	0.289	0.006	0.041	15.41%	(0.099,0.364)	67.902 ***	
Cognitive dimension *Low-level	3	716	0.355	0.461	0.003	0.024	12.77%	(0.202,0.509)	17.828 ***	1.604
Cognitive dimension *High-level	7	1421	0.206	0.247	0.005	0.022	21.72%	(0.087,0.325)	28.571 ***	

Note: a—when the number of samples is less than three in bivariate subgroup analysis, meta-analysis estimates are not provided. For example, we do not reveal how ownership structure serves as a contingency in the link between the dimensions or types of social capital and firm performance. Z-score = statistic based on test for significance of difference in effect sizes; † $p <$ 0.10, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, two-tailed test.

4.2.2. Industrial Type

As shown in Table 3, the effect sizes of social capital are somewhat larger for high-tech industries ($Rc = 0.312$) than low-tech industries ($Rc = 0.236$). In support of **Hypothesis 3**, this difference is marginally significant ($Z = 1.644$, $p < 0.1$). Besides, both effect sizes of social capital in high-tech industries and low-tech industries remain heterogeneous, as indicated by the Q-statistics. Other moderators may be in operation within subgroups.

As shown in Table 3, effect sizes of external and internal social capital are larger for high-tech industries ($Rc = 0.300$; $Rc = 0.221$) than low-tech industries ($Rc = 0.236$; $Rc = 0.208$). However, the effect size of internal social capital for low-tech industries is not significant. Furthermore, effect sizes of relationship and cognitive dimension are larger for low-tech industries ($Rc = 0.387$; $Rc = 0.340$) than high-tech industries ($Rc = 0.357$; $Rc = 0.292$). On the contrary, the structure dimension has greater effect sizes in high-tech industries ($Rc = 0.317$) than in low-tech industries ($Rc = 0.230$). However, in these cases, differences in effect sizes are not statistically significant, possibly due to low statistical power resulting from the small number of studies. Therefore, based on existing empirical research, we could not examine the moderating role of industrial type in the relationship between individual dimension or type of social capital and firm performance in China.

4.2.3. Marketization Process

As shown in Table 3, the positive effect size of social capital is larger in regions with low-level marketization ($Rc = 0.448$) than high-level marketization ($Rc = 0.237$). The difference is statistically significant ($Z = 2.344$, $p < 0.05$), which means **Hypothesis 4** cannot be rejected. Although the variance explained by sampling error for each subgroup is higher than for the overall effect, the effect sizes for both subgroup remain heterogeneous since the Q-statistic is significant, suggesting the presence of additional moderators.

Besides, external social capital has a stronger positive relationship with firm performance in low-level marketization, and the difference is statistically significant ($Z = 2.636$, $p < 0.01$). The percentage of variance due to sampling error increases substantially compared with the overall effect, but the effects of external social capital in each subgroup remain heterogeneous, as indicated by Q-statistics. Thus, other moderators are likely to exit.

Furthermore, structure, relationship, and cognitive dimensions are more positively related to firm performance in the context of low-level marketization ($Rc = 0.353$; $Rc = 0.460$; $Rc = 0.461$) than high-level marketization ($Rc = 0.256$; $Rc = 0.289$; $Rc = 0.247$). But the differences in moderating effect are not statistically significant ($Z = 0.307$, n.s.; $Z = 1.531$, n.s.; $Z = 1.604$, n.s.). Therefore, based on existing empirical research, we can only examine the moderating role of industrial type in the relationship between external social capital and firm performance in China.

4.3. Methodological Moderators Analysis

The results pertaining to our examination of methodological moderators in the overall relationship between social capital and firm performance are presented in Table 4. The relationship between social capital and firm performance varies with the choice of performance measurements and dimensions.

With regard to firm performance measures, Table 4 shows that effect size was larger for studies employing subjective scales ($Rc = 0.306$) than for studies using quantitative performance measures ($Rc = 0.053$).

As for firm performance dimensions, the effect size is also larger when studies consider nonfinancial performance outcomes ($Rc = 0.327$) than when studies focus on growth ($Rc = 0.238$) or profit outcomes ($Rc = 0.084$). However, there is no difference in the effects between growth and non-profit oriented measures ($Z = 1.021$, n.s.).

Table 4. Results of bivariate methodological moderator analysis.

Social capital Variable	K	N	R_W	R_C	Se^2	Sr^2	% Variance Due to Sampling Error	95% Confidence Interval	Q Statistic x^2	Z-Score
Performance measure										
Subjective scale	87	19382	0.249	0.306	0.004	0.036	10.59%	(0.232,0.319)	838.517 ***	5.478 ***
Objective quantified	20	7636	0.044	0.053	0.003	0.013	20.00%	(0.007,0.145)	75.714 ***	
Performance dimension										
Growth	22	5391	0.187	0.218	0.004	0.036	10.31%	(0.147,0.342)	167.173 ***	2.478 *[a]
Profit	18	6534	0.068	0.084	0.003	0.028	18.87%	(0.032,0.170)	123.709 ***	4.396 ***[b]
Non-financial	49	11280	0.268	0.327	0.004	0.035	10.73%	(0.222,0.342)	538.768 ***	1.021 [c]

Note: *Z-score* = statistic based on test for significance of difference in effect sizes; † $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, two-tailed test. [a] Growth versus profit. [b] Profit versus non-financial. [c] Growth versus non-financial.

5. Discussion

5.1. Key Findings

5.1.1. The Aspects of Social Capital

Based on 106 studies with an overall sample size of 26,854, our analysis reveals a positive influence of social capital on firm performance in China's transition economy. It suggests that although entrepreneurs or firms must invest substantial resources to cultivate their social capital, which does create value for firms. In comparing the relative influence of different dimensions or types of social capital, our findings suggest that structure, relationship, and cognitive dimensions of social capital, internal and external social capital, institutional and business social capital are all positively related to firm performance.

As for characteristic dimensions of social capital, our results suggest that structure, relationship, and cognitive dimensions are all positively related to firm performance. However, some scholars believe that the structure dimension is not correlated with firm performance. There may be a reason for this difference. In the Chinese context, social capital is accustomed to being divided into relationship patterns mostly based on the type of network members, such as political relations, business relations, and so on. In essence, the diversity of relationship patterns, to some extent, can reflect the structure dimension of social capital, which is in favor of having access to a variety of sources. Besides, the effect size of the relationship dimension is significantly larger than those of the cognitive dimension and the structure dimension. These results contribute to recent debates about the value of the different characteristics of social capital by revealing that the relationship dimension seems relatively more valuable. This is in accordance with the Chinese context, where mutual trust and cognition have a direct effect on the establishment of relationships. In transition economies, firms pay more attention to the quality of the relationship. Interactive relationships between firms in the relationship network that gives birth to social capital, such as trust, commitment, common values, and so on, are more important than network structure.

As for external and internal social capital, our findings suggest that the effect size of internal social capital is significantly larger than those of external social capital. As an internal advantage, internal social capital is the basis for the smooth operation of firms [57–59], as well as a key to stimulating the operation of external social capital.

As for institutional and business social capital, our results suggest that the effect size of business social capital is significantly larger than those of institutional social capital. This may be attributed to the fact that it is difficult for institutional social capital to function as before, while the business social capital can function more normally, with the marketing process moving forward and the enhancement of transparency during China's economic transformation.

5.1.2. The Aspects of Theoretical Moderators

Moderators in our studies were divided into two groups: theoretical moderators and methodological moderators. The first group includes moderators that are derived from ownership structure, industrial type, and marketization process. Our results suggest that the optimal configuration of social capital changes with industrial type, and marketization process, which is beneficial to further develop a contingency theory of social capital in China's transition economy.

Although the positive effect size of social capital is indeed higher for private enterprises than for state-owned enterprises, the difference is not statistically significant. The lack of significant difference merits further discussion. A possible explanation is that with the Chinese marketization process, moving forward, social capital may be important for private enterprises as well as state-owned enterprises. State-owned enterprises with a lot of privileges can have more advantages in getting access to government resources. However, state-owned enterprises would be eliminated by market competition without market recognition. At the same time, private enterprises tend to focus on market

power and to get professional information and knowledge through commercial networks. However, private enterprises cannot gain enough market attention without the help of so-called "national reputation" in a transition economy. Therefore, there is a close relationship between social capital and firm performance for state-owned enterprises and private enterprises. Private and state-owned enterprises should enforce the cultivation and accumulation of political and business social capital, which need strategic improvements for their shortage. Besides, the number of studies about state-owned enterprises is limited, which may result in statistically insignificant. Due to the limitation of the number of studies, it is impossible to analyze the relationship between dimensions or types of social capital and firm performance. Thus, in future research, it is feasible to try analyzing which dimensions or types of social capital may be the most valuable and which can be the most suitable in exploring competitive advantages within certain enterprise types.

Meta-analysis also exposes that the social capital–performance relationship depends on whether the firm belongs to high-tech industries or low-tech industries. This is different from previous research that mostly treats it as a control or only focuses on a single industry. Our results suggest that social capital has a stronger positive link with performance in high-tech industries than in low-tech industries. This result is in accordance with Rowley's study [44], considering that social capital is more significant for promoting the adaptability of firms in uncertain environments. In the high-tech industries, social capital can influence firms' alertness to environmental changes and help firms to detect or gain relevant market information, technical information. It would be interesting to investigate further why some firms are able to reconfigure their social capital to fit changing industrial conditions, while others are troubled by "network inertia" [60] since social capital indeed serves to align firms with their industry context.

Our results also reveal differences across regions with different marketization degrees. We find that social capital had a stronger positive relationship with firm performance in low-level marketization. This is not in line with Peng and Luo (2000) [33]. At present, China is forming a coexistent situation of both planning and market mechanisms. The relational structure between two mechanisms results in dynamic evolution, interactive change, and the occurrence of institutional gaps, which lead to the inefficiency of the formal system, the fuzziness of regulations, and the high uncertainty of the macro-environment. Moreover, the contradiction between the two mechanisms becomes more obvious in areas with a lower marketization degree. However, social capital can work as an informal system to remedy the weaknesses of an imperfect formal system. Besides, except for external social capital, we did not find significant differences in the magnitude of the relationship between other dimensions or types and firm performance. Therefore, it is not clear whether the relationship between other dimensions or types of social capital and firm performance is moderated by the marketization process.

5.1.3. The Aspects of Methodological Moderators

The second group of moderators related to the choice of performance measures and dimensions produced different effect sizes. The effect size was larger for studies employing subjective scales than for studies using quantitative measures. One implication is that future research may benefit from using multiple measures, combining scale items with quantitative indicators. Another implication is that studies could explore why there might be any divergence in research findings across subjective and objective measures.

As for firm performance dimensions, the non-financial dimension yielded higher effect size than the growth dimension and the profit dimension. The result is in line with Stam's research results [7]. Therefore, when only financial performance is considered and the indicators about operational effectiveness are disregarded, we may be lessening the true value of social capital. Hence, future research may adopt more refined measures of performance that tap into the varied elements of firm operation process and results.

5.2. Research Contributions

In China's transition economy, little agreement exists about which property of social capital enhances firm performance. To help overcome this debate, we used 15 years of social capital research in our meta-analysis, synthesizing cumulative research findings and identifying new moderators. The main findings of the study are summarized as follows:

In the first place, this paper verifies that social capital does affect firm performance in China's transition economy, which reconciles the above debate. Our study not only expands the research viewpoint of the cause analysis of firm performance but also enriches the contextualized research on the social capital theory, which is a response and fulfillment to the appeal for reinforcing situation study on social capital.

Secondly, this paper analyzed how different dimensions or types of social capital impact firm performance in China's transition economy, rather than only being focused on the single construct "social capital" without classified processing. Therefore, based on system analysis on the role of different dimensions or types of social capital, we can remedy the weaknesses of vague generalities and fragmentation of previous research, which enriches research content and the perspective of social capital.

Besides, this paper teased out theoretical moderators and methodological moderators and explored how they influenced the relationship between social capital and firm performance. The contribution is enriching the relationship framework between social capital and firm performance in China's transition economy, which is beneficial to guide researchers to further develop a contingency theory of social capital in different situations.

5.3. Management Implications

Firstly, our analysis reveals a positive overall relationship between social capital and firm performance in China's transition economy. In addition, different dimensions and types of social capital have influenced firm performance. Hence, firms should actively cultivate social capital in China's transition economy. From the perspective of the characteristic dimension, it is important to mention that firms in China pay more attention to the quality of relationships, rather than only the number of relationships. They should positively develop a cooperation relationship for mutual benefit and respect through efficient communication and benign interaction, so as to improve mutual understanding and recognition. Furthermore, from the perspective of type, they should attach a high value on diversification of types of social capital, which could set the perfect ambiance in internal and external environments for firms and maintain sound cooperative relationships in order to promote resource integration, thus sustaining firms' rapid growth.

Secondly, our results suggest that social capital has a stronger positive link with performance in high-tech industries. Therefore, high-tech firms should put more emphasis on social capital. The main form of social capital for high-tech firms is an innovation network that consists of firms, colleges, research institutions, and so on. Hence, high-tech firms should give full play to the role of innovation networks, which can promote university–industry–research cooperation and business growth by building formal and informal cooperative relationships.

Finally, our results suggest that social capital has a stronger positive relationship with firm performance in low-level marketization. Firms in areas with lower marketization degrees should pay more attention to the role of social capital, especially external social capital, in order to develop opportunities hidden in the uncertain environment and make profits. In other words, establishing effective connections externally to form strong collaborative networks can work as an informal system to remedy the weaknesses of the imperfect formal system and market environment in low-level marketization.

6. Limitations and Future Research Directions

First, although meta-analysis results are not spuriously limited by choices made or methods used in any original study, they are limited by systematic or widely shared features of the original studies [50]. For example, the number of original studies is relatively limited. We only found three studies examining the effect of state-owned enterprises' social capital on firm performance, which may impact the observed variance and effect sizes. Therefore, it is necessary for future studies to increase the statistical power of the effects covered in the current study. Besides, more than 97 percent of the studies included in the meta-analysis review were cross-sectional in nature. Van Wijk et al. (2008) [50] suggested that longitudinal analysis would assess the temporal stability of the conclusions and assist researchers in better understanding the causal relationships. Since many researchers anticipate time lags in the relationship between social capital and firm performance, future research may seek to use panel data and include lagged relationships.

Second, it is tough to distinguish between industries only based on their technology level because it is difficult to identify real differences in knowledge property in different industries. Therefore, in the future, knowledge characteristics, such as knowledge ambiguity or tacitness, should be taken into account in order to analyze how these characteristics affect the relationship between social capital and firm performance in different industries.

Third, although our study aims at firm performance, the problem of how social capital at an individual level is translated into firm-level outcomes is not illustrated. Future research may, therefore, directly distinguish social capital based on individual and firm levels. Then, researchers could explore how social capital at the individual level influences entrepreneurs' motivations, goals, and decision-making in order to resolve questions about the processes through which social capital at the individual level is translated into firm-level outcomes.

Fourth, a promising avenue for future research is the examination of curvilinear relationships between social capital and firm performance. While our results suggest positive linear relationships between social capital and firm performance, these relationships may be curvilinear. For instance, as the number of network relationships grows beyond a certain level, the benefits from those may be offset by the time, energy, and attention needed to establish and maintain such relationships.

Finally, a bibliometric study based on the information, such as journal, indexation, topic area, year of publication, methodologies used on prior studies, may help to extend our understanding in this topic of social capital and firm performance studies. Besides, firm performance may, in turn, affect social capital. Therefore, future studies can explore the existence of such relationships.

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