

Article

The Effect of Relational Capital on Organizational Performance in Supply Chain: The Mediating Role of Explicit and Tacit Knowledge Sharing

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Abstract: Relational capital and organizational performance were important factors for achieving sustainable development of the supply chain, and knowledge sharing could create and maintain sustainable competitive advantages of the supply chain. This study examined the comprehensive relationship among relational capital, explicit and tacit knowledge sharing, and organizational performance and the mediating roles of explicit and tacit knowledge sharing between relational capital and organizational performance in the supply chain by using data collected from a questionnaire survey. SPSS, AMOS, and a structural equation model were used to analysis these data and the aforementioned relationships. The results confirmed that relational capital had a positive impact on explicit and tacit knowledge sharing, there was no relation to organizational performance, and explicit and tacit knowledge sharing played mediating roles between relational capital and organizational performance in the supply chain. The research results could provide theoretical guidance for managers to formulate sustainable development strategies that maintain good relationships and economic benefits of enterprises in the supply chain.

Keywords: supply chain; relational capital; explicit and tacit knowledge sharing; organizational performance; sustainable development



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1. Introduction

Maintaining the sustainable development of the supply chain has been a hot issue [1]. The supply chain refers to a functional network chain structure of connected customers and member enterprises including suppliers, manufacturers, and distributors around the core enterprise [2], and it is also an important way to achieve high-quality economic, social and environmental development [3]. A high level of supply chain management can promote the sustainable operation and development of a supply chain system [4]. Economic sustainability, social sustainability and environmental sustainability are the three pillars of sustainable development. From the perspective of economic sustainability, organizational performance is an important economic indicator to measure the level of supply chain management, as well as the guarantee to achieve a sustainable competitive advantage of the supply chain [5]. To adapt to changes in the market environment, the core enterprise in the supply chain must increase the overall organizational performance and seek overall optimization [6,7].

Knowledge management can promote sustainable organizational performance [8]. With the advent of the era of knowledge economy, knowledge is regarded as an important resource of organizations, and many organizations realize that knowledge management is an important way to achieve sustainable competitive advantage [9,10]. Knowledge management is the activity of planning and managing the creation and application of knowledge [11]. Knowledge sharing is an important link of knowledge management [12], and it is the activity transferring knowledge from one person or organization to another [13].

Knowledge integration in the supply chain can be accumulated via knowledge sharing, and effective knowledge sharing among member enterprises in the supply chain can improve organizational performance [14]. The organizational performance is difficult to achieve without effective knowledge sharing [15]. Thus, knowledge sharing is particularly important for improving organizational performance. Knowledge can be divided into explicit and tacit knowledge based on a knowledge creation theory [16]. Explicit knowledge can be encoded and transmitted by through words, books, media, and software, etc., and the use of technology has eased the management [17]. Tacit knowledge refers to the understanding, capabilities, skills, and experience, and communicating tacit knowledge remains a challenge [18]. Supply chain management can enable stakeholder groups to form strategic alliances, which facilitate knowledge sharing among enterprises [19]. Core enterprises use many tools and methods to promote knowledge sharing in the supply chain. Collaborative design workshops can facilitate collaborative discussion among multiple stakeholder groups and enhance the benefits of knowledge feedback loops [20]. Li et al. [21] propose a stochastic evolution model to promote knowledge sharing among supply chain enterprises. Kogler and Rauch [22] propose a workshop based on game to promote knowledge transfer in the supply chain. Chai and Li [23] design a supply chain resource sharing platform based on block chain to promote knowledge sharing among enterprises. However, knowledge is a type of private asset, and the knowledge-sharing decisions are determined by the strategic interaction between the enterprises in the supply chain [24].

The view that social capital can promote sustainable development has been confirmed [25]. Social capital factors include trust, norms, sanctions and social recognition, etc. [26], and these factors can improve the supply chain performance and sustainable competitive advantages [26,27]. From the perspective of social relationships, relational capital is an important part of social capital, which refers to the trust, commitment and identity between people [28]. Supply chain partnerships affect organizational performance and sustainable advantages [29]. In addition, organizational trust can promote explicit and tacit knowledge sharing [30], and the establishment of relational capital also creates a good cooperative environment for knowledge sharing [31]. Supply chain relationship quality has an important impact on explicit and tacit knowledge sharing [32]. Thus, relational capital affects knowledge sharing and organizational performance, respectively.

Sustainable development theory indicates that social sustainability, economic sustainability and environmental sustainability are interrelated. Some studies also point out that relational capital, explicit and tacit knowledge sharing, and organizational performance have a certain relationship and are conducive to sustainable development, but the comprehensive relationship of these factors in the supply chain is not clear. Grasping the relationships between these factors helps managers to formulate the sustainable development strategies of the supply chain. Combined with the above analysis, the following questions are raised:

1. How does relational capital affect explicit and tacit knowledge sharing and organizational performance in the supply chain?
2. What are the roles of explicit and tacit knowledge sharing in the impacts of relational capital on organizational performance in the supply chain?

To answer these questions, an integrated model is provided for explaining the relationships among relational capital, explicit and tacit knowledge sharing and organizational performance. In the selection of the research method, structural equation modeling (SEM) is a common method to analyze the relationships between the factors. The investigation of interaction between relational capital, explicit and tacit knowledge sharing, and organizational performance is a multi-factor analysis problem, and SEM is often used for such problems [33]. Thus, SEM is used to evaluate the correlation among these factors based on a survey of 299 enterprises. The model is not only an improvement and perfection of the existing research, but also an integration and expansion of the research on sustainable de-

velopment theory, social capital theory, and knowledge management theory. The research results are conducive to formulate sustainable development strategies of the supply chain.

2. Literature Review

2.1. Relational Capital in Supply Chain

Relational capital provided a way for enterprises to obtain various resources in the supply chain, and enterprises could cooperate with supply chain partners based on relational capital for achieving sustainable competitive advantages [34]. The sustainable competitive advantage of enterprises not only depended on the internal resources of enterprises, but also depended on the cooperation between enterprises in the supply chain [35]. Relational capital referred to the trust, commitment and identity between people [28]. Supply chain relational capital could strengthen the trust and communication between enterprises, promote the complementary cooperation and interdependence of resources between enterprises, and improve the utilization rate of resources, so as to achieve a sustainable competitive advantage [36]. A supply chain relationship could promote resource exchange and sharing, communication and cooperation between organizations, knowledge transfer and inter-organizational learning [28]. In addition, supply chain relational capital could promote downstream enterprises to feed back their demands to upstream enterprises, and it was conducive to accelerate innovation efficiency and reduce research and development costs, and could timely detect and respond to market changes [37]. Thus, relational capital was a valuable resource for enterprises to realize sustainable development of supply chain.

2.2. Relationship among Relational Capital, Knowledge Sharing and Organizational Performance

2.2.1. Effect of Relational Capital on Knowledge Sharing

Relational capital was an important part of social capital and an influential factor of social sustainable development, and it had a close connection with knowledge sharing [15]. Yong et al. [38] indicated knowledge sharing could achieving sustainable competitive advantages, and social capital was conducive to promoting knowledge sharing. Borges et al. [39] also used SEM to analyze the impact of social relations on knowledge sharing willingness. Some scholars studied the relationship between relational capital and knowledge sharing from the perspective of social relations. Allameh [40] used SEM to analyze the relationship between relational capital and knowledge sharing among enterprises. Margaret and Nathaniel [41] indicated relational capital could strengthen the impact of knowledge sharing on innovation capability. Ganguly et al. [42] revealed the relationship between social capital and knowledge sharing in determining innovation capability via empirical analysis. According to the above analysis, SEM was often used in previous studies, and it was believed that relational capital played an important role in promoting knowledge sharing.

2.2.2. Effect of Relational Capital on Organizational Performance

Organizational performance was an important economic indicator to measure sustainable development [5], and relational capital was an influential factor of social sustainable development. Sustainable development theory indicated social sustainability and economic sustainability were closely related. Kim et al. [15] proposed the relational structure of social capital, knowledge collecting and denoting, and organizational performance. Sambasivan et al. [36] indicated relational capital was a key factor affecting the outcome of strategic alliance in the supply chain. Yu et al. [37] used SEM to analysis the link between relational capital and financial performance in the green supply chain management, and indicated relational capital could indirectly improve financial performance via green supply chain management. Wu et al. [34] analyzed the role of relational capital in the supply chain management via empirical analysis, and indicated relational capital could improve the performance of supply chain management. According to the above analysis, the most previous studies used SEM to analysis the relationship between them, and it was believed

that relational capital was an important influencing factor of organizational performance in the supply chain.

2.2.3. Effect of Knowledge Sharing on Organizational Performance

Knowledge sharing in the supply chain referred to the mutual exchange of knowledge among supply chain enterprises, so that knowledge could be extended from the experience of a single enterprise to the whole supply chain [21]. Knowledge sharing was critical to creating and maintaining sustainable competitive advantages [38], while organizational performance is an important economic indicator to measure sustainable development. Many scholars studied the relationship between them. Kordab et al. [8] proposed a relationship model among knowledge management, organizational learning and sustainable organizational performance, and indicated knowledge sharing could improve sustainable organizational performance via organizational learning. Muhammed and Zaim [9] suggested peer knowledge sharing impacted financial and innovation performance of enterprises. Mehdikhani and Valmohammadi [19] analyzed the influence of internal and external knowledge sharing on sustainable supply chain management performance and their mediating effect via data survey. Abbas et al. [43] used SEM to analyze the impact of knowledge sharing on sustainable performance in Islamic banks. Zheng et al. [44] indicated knowledge sharing played a mediating role between leadership and organizational performance. Nguyen et al. [45] indicated cross-functional knowledge sharing could influence organizational performance. Considering the different forms of knowledge, Ali et al. [46] analyzed the relationship between explicit and tacit knowledge sharing and organizational performance, and indicated both explicit and tacit knowledge sharing affected organizational performance. Le et al. [16] analyzed the mediating role of explicit and tacit knowledge sharing via empirical analysis, and indicated they played mediating roles between culture and performance. According to the above analysis, SEM and data survey were often used in previous studies, and it was believed that knowledge sharing and organizational performance were closely related in the supply chain.

2.2.4. Gaps Identified in Existing Literature

Based on the preceding literature review, the following gaps are identified.

1. Relational capital is an important factor for the sustainable development of social relations, and knowledge sharing is an important factor for creating and maintaining sustainable competitive advantages of the supply chain. The previous studies have emphasized the impact of relational capital on knowledge sharing in the supply chain. However, few studies consider the explicit and tacit characteristics of knowledge and analyze the influence of relational capital on both explicit and tacit knowledge sharing in the supply chain.
2. Many previous studies indicate organizational performance is an important economic indicator to measure sustainable development, and relational capital is conducive to organizational performance in the supply chain. However, some studies indicate that relational social capital has no significant effect on sustainable organizational performance [47]. For the study of their relationship, the views of existing research are not completely consistent.
3. The previous studies have focused on the direct impact among relational capital, knowledge sharing and organizational performance in the supply chain, and also analyzed the mediating roles of knowledge sharing. However, there were few studies on the integrated influence of these factors in the supply chain and the roles of explicit and tacit knowledge sharing between relational capital and organizational performance in supply chain.

Thus, the present study explored the influence relationships among relational capital, explicit and tacit knowledge sharing, and organizational performance in the supply chain, and interpreted the relationships among these factors via empirical analysis.

2.3. SEM

SEM was a common method to analyze the relationships between the factors. The investigation of interaction between relational capital, explicit and tacit knowledge sharing, and organizational performance was a multi-factor analysis problem, and SEM was often used for such problems [33]. Some other methods could also be used to investigate this type of problem, including grey clustering analysis [48], social network analysis [49], the sequential mixed method [50], and the system dynamics model (Impact of Open Innovation Communities on Enterprise Innovation Performance: A System Dynamics Perspective), etc. Compared with these methods, SEM had the following advantages [51]: (1) multiple dependent variables were processed simultaneously, (2) a certain measurement error was allowed, and (3) relationships between latent variables could be found. Akhavan and Hosseini [52] proposed the relationship model between social capital and knowledge sharing based on SEM. Allameh [40] used SEM to analyze the effect of relational capital on knowledge sharing and innovation. Thus, SEM was suitable for this study, and the research procedure of this study was shown in Figure 1.

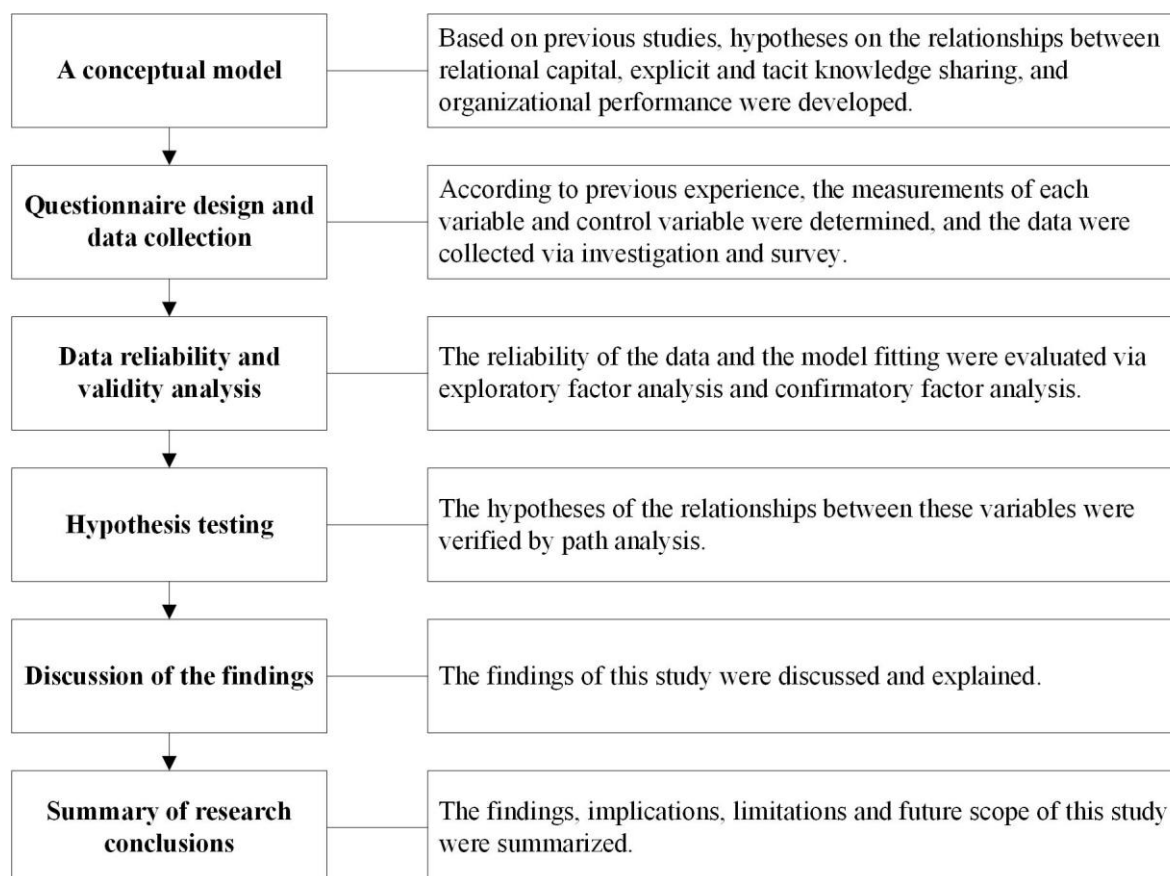


Figure 1. The research procedure.

3. Hypotheses Development

The research hypotheses are derived to verify the relationships between the research variables. A conceptual model is constructed based on relevant literature, and it is shown in Figure 2.

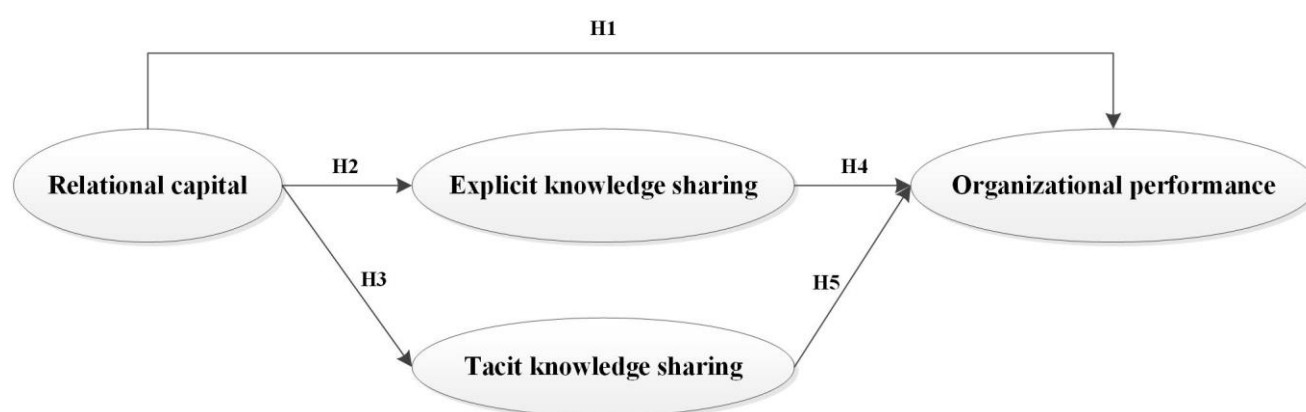


Figure 2. The conceptual model.

3.1. Relational Capital and Organizational Performance

Relational capital is an influential factor of social sustainable development, while organizational performance is an important economic indicator to measure sustainable development [5]. Sustainable development theory indicates social sustainability and economic sustainability are interrelated. There is a connection between relational capital and organizational performance. Relational capital is a unique relationship resource based on trust, respect and friendship between enterprise [53]. It is also a close interactive relationship of respect and trust between partners. The relationship networks based on trust and commitment provide a good communication environment to acquire resources and enhance capabilities, so as to improve organizational performance [54]. Relational capital mainly refers to the trust and commitment among enterprises [55]. The trust between enterprises in the supply chain not only promotes the more effective information exchange, but also decreases costs in the collaboration. It helps the supply chain partners to reduce the cost of information acquisition in the collaboration, and encourages partners to abide and carry out the agreement reached [56]. This inter-organizational trust is an important source that improve organizational performance [57]. At the same time, commitment creates a mutually beneficial relationship, which provide valuable resources into organizational performance. According to the above analysis, the following hypotheses is proposed:

Hypothesis 1 (H1). *Relational capital is positively associated with organizational performance in the supply chain.*

3.2. Relational Capital and Knowledge Sharing

Knowledge sharing is a process of continuous knowledge exchange between enterprises [58], and relational capital is conducive to this sustainable knowledge sharing [59]. Establishing relational capital between enterprises in the supply chain can provide an good cooperation environment [60]. This cooperation environment is a key condition for realizing knowledge sharing [16]. Affective commitment and professional trust have positive effects on knowledge sharing and knowledge utilization [61]. Knowledge is divided into explicit and tacit knowledge, and the distinction between them is transmission mode [18]. Explicit knowledge is easily shared and transmitted in many ways [62], and collaboration is an important way [59]. Tacit knowledge sharing relies on trust and commitment between enterprises and most of these knowledge are transmitted via communication and cooperation [42]. Relational capital is helpful to amplify the impact of tacit knowledge sharing [41]. According to the above analysis, the following hypotheses are proposed:

Hypothesis 2 (H2). *Relational capital is positively effect on explicit knowledge sharing in the supply chain.*

Hypothesis 3 (H3). *Relational capital is positively effect on tacit knowledge sharing in the supply chain.*

3.3. Knowledge Sharing and Organizational Performance

Knowledge sharing can create and maintain sustainable competitive advantages [38], and sustainable innovation in the supply chain depends on a high level of knowledge sharing between enterprises [63]. Sustainable innovation is conducive to improving organizational performance in the supply chain [64]. The improvement of organizational performance requires effective knowledge sharing among enterprises [65]. Considering the different forms of knowledge, explicit knowledge sharing refers to the behavior of member enterprises to share documents, work-related tools, operation specifications, training, and other materials with other partners [18]. Tacit knowledge sharing refers to the behavior of sharing experience, ideas, etc. [42]. Explicit and tacit knowledge sharing among enterprises play key roles for the improvement of performance in the supply chain [32]. According to the above analysis, the following hypotheses are proposed:

Hypothesis 4 (H4). *Explicit knowledge sharing is positively effect on organizational performance in the supply chain.*

Hypothesis 5 (H5). *Tacit knowledge sharing is positively effect on organizational performance in the supply chain.*

4. Empirical Analysis

4.1. Sample and Data Collection

The validity of the model and research hypotheses were tested via a questionnaire survey of 335 companies operating in China. Regarding the designation of respondents, the respondents should be the key employees, e.g., manager/project manager, procurement managers, supply chain managers, logistics managers and/or CEOs, specialists, etc., having a certain level of professional knowledge, ability and maturity. In order to ensure the objectivity of data analysis, firstly, companies with good reputation in the industry were selected as the research objects; secondly, the selected companies covered the whole upstream and downstream enterprises of the supply chain in terms of sample selection; finally, the selected companies could constitute a complete industrial supply chain.

The project group that conducted this study includes nine members from the same university. Two of the members are professors who were responsible for designing the surveys, providing necessary training, and leading the seven students to conduct interviews, distribute and collect questionnaires, and perform subsequent data analysis. To ensure the quality of the investigation work, a pilot study was conducted on some well-known enterprises. During this process, the content of the questionnaire was adjusted so that the interviewees could accurately understand the meanings of the questionnaire items and provide factual answers. Data were collected from March to November 2020. In total, 299 complete and available questionnaires were collected from the participating companies, thereby reflecting a response rate of 89%. The majority of the respondents were project managers (41%) and heads of R&D (30%). Table 1 lists the characteristics of the surveyed enterprises, including the enterprise age, number of employees, annual turnover, and total assets.

Table 1. Demographic information of respondents.

Variable	Number of Firms	Percentage (%)
Firm Age (years)		
<5	45	15.1
6–10	69	23.1
11–15	71	23.7
16–20	66	22.1
>20	48	16.1
Number of employees		
<100	47	15.7
100–500	96	32.1
501–1000	87	29.1
>1000	69	23.1
Annual turnover (million RMB Yuan)		
<10	36	12.0
10–50	31	10.4
51–100	68	22.7
101–300	78	26.1
301–1000	34	11.4
>1000	52	17.4
Total assets (million RMB Yuan)		
<40	35	11.7
41–100	77	25.8
101–400	98	32.8
>400	89	29.8

4.2. Measurements

In order to ensure the validity and reliability of measurement, this paper adopts the measurement method developed by predecessors. All items in the questionnaire were measured using a five-point Likert scale, with 1 indicating strongly disagree and 5 indicating strongly agree [18,42]. Table 2 described the indicators of these variables.

4.2.1. Relational Capital

This variable used three items adopted and modified from Lazzarotti, et al. [66], Wu et al. [34] and Yu et al. [37]. Trust, respect, friendship and reciprocity was the measurement indicators of the major suppliers' and customers' relational capital [34,37]. This view was also supported by Lazzarotti et al. [66].

4.2.2. Explicit and Tacit Knowledge Sharing

Explicit knowledge sharing used three items adopted and modified from Le et al. [16], Wang and Hu [2] and Lei et al. [17]. Existing reports, manuals, technical materials, and official documents were all considered explicit knowledge, and they could be used to measure explicit knowledge sharing. Tacit knowledge sharing used three items adopted and modified from Ganguly et al. [42], Wang and Hu [2] and Lei et al. [17]. Work experience, know-how, know-where, know-whom and ideas from innovation work were all considered tacit knowledge, and they could be used to measure explicit knowledge sharing.

Table 2. Contents of the scale.

Construct	Item	Source
Relational capital (RC)	RC1. Our firm have a high degree of trust with other members of the supply chain RC2. Other members of the supply chain will honor their commitments RC3. Other members of the supply chain will communicate with us when the market environment changes	Lazzarotti et al. [66], Yu et al. [37] and Wu et al. [34]
Explicit knowledge sharing (EKS)	EKS1. Our firm shares our innovation work reports to other members of the supply chain EKS2. Our firm shares our technical documents to other members of the supply chain EKS3. Our firm shares our manuals and methodologies to other members of the supply chain	Le et al. [16], Lei et al. [17]
Tacit knowledge sharing (TKS)	TKS1. Our firm frequently shares work experience with other members of the supply chain TKS2. Our firm frequently shares know-how with other members of the supply chain TKS3. Our firm frequently shares ideas from innovation work with other members of the supply chain	Ganguly et al. [42], Lei et al. [17]
Organizational performance (OP)	OP1. Our firm provides reliable delivery to our customers OP2. Our firm's average market share growth over the past three years OP3. Our company's profit growth over the past three years	Arora et al. [67], Gorane and Kant [68] and Ul Haq [69]

4.2.3. Organizational Performance

This variable used three items adopted and modified from Arora, et al. [67], Gorane and Kant [68] and Ul Haq [69]. Organizational performance was defined and measured by financial and marketing performance [67], and operational performance was also a measurement dimension of organizational performance [68,69].

4.2.4. Control Variables

The age of an enterprise may affect its organizational performance, as the culture may be a function of longevity [2]. The size of an enterprise may be a potential confounding factor [70]. The scale of an enterprise reflects its ability to invest, thus the annual turnover and total assets were used as control variables [17]. Based on the objective criteria of the previous literatures, the age, the size, the annual turnover and total assets of the company were used as the control variables in this study.

4.3. Reliability and Validity

Reliability and validity can be assessed by testing the factor loading, composite reliability, and average variance extracted (AVE) [71]. SPSS 21.0 and AMOS 24.0 software are used for data analysis. Table 3 reveals that the factor loadings and composite reliabilities are higher than the cutoff level of 0.7 suggested by Wang and Kwek [72].

Table 3. Construct validity and reliability.

Construct	Item	Cronbach's Alpha	Factor Loading	Composite Reliability	AVE
Relational capital	RC1	0.945	0.886	0.900	0.751
	RC2		0.876		
	RC3		0.837		
Explicit knowledge sharing	EKS1	0.917	0.913	0.918	0.789
	EKS2		0.899		
	EKS3		0.852		
Tacit knowledge sharing	TKS1	0.859	0.857	0.866	0.683
	TKS2		0.815		
	TKS3		0.806		
Organizational performance	OP1	0.850	0.860	0.868	0.688
	OP2		0.814		
	OP3		0.813		

The AVE values are found to exceed the threshold of 0.5 recommended by Moreno et al. [73]. The results show that the survey samples are satisfactory. In addition, the reliability is assessed using Cronbach's α . Table 2 shows that all the α values exceed the threshold of 0.7 suggested by Kim and Nguyen [71], and it indicates that the reliability of the survey samples is satisfactory.

The fitting degree of the structural model is measured by the following indicators [17]. Table 4 shows that the fit indices of the model are satisfactory.

Table 4. Model fit indices of structural model.

Fix Index	Scores	Recommended Value
χ^2/df	3.48	≤ 2 a; ≤ 5 b
GFI	0.922	≥ 0.90 a; ≥ 0.80 b
RMSEA	0.091	≤ 0.08 a; ≤ 0.10 b
NFI	0.943	≥ 0.90 a;
AGFI	0.867	≥ 0.90 a; ≥ 0.80 b
CFI	0.959	≥ 0.90 a;

Note: a—Acceptability: acceptable; b—Acceptability: marginal.

4.4. Hypotheses and Mediating Effect Testing

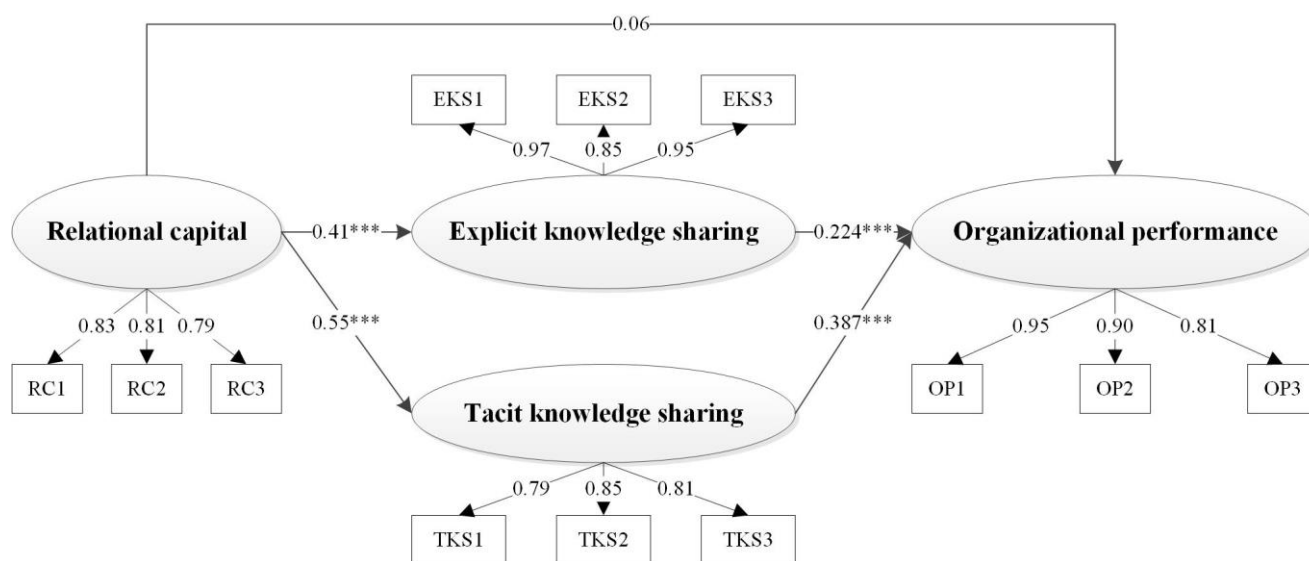
4.4.1. Hypotheses Testing

The objective of the structural path analysis is to test the hypotheses and analyze the mediating effects of the latent variables [72]. The p -value is an important indicator of hypothesis testing. When the p -value is greater than 0.5, the factor is considered to have no influence. When the p -value is less than 0.5, the factor is considered to have a statistically significant influence [2]. The results are exhibited in Table 5, while Figure 3 shows the structural path diagram. The figure contains the path coefficient, outer loadings of indicators of each construct. The test results are as follows:

Table 5. Regression weights of the structural model and summary of hypotheses testing results.

Hypotheses	Path	Estimate	Standard Error	Critical Ratio	<i>p</i>	Result
H1	OP←RC	0.095	0.126	0.749	0.454	Not supported
H2	EKS←RC	0.650	0.099	6.547	***	Supported
H3	TKS←RC	0.701	0.086	8.151	***	Supported
H4	OP←EKS	0.224	0.060	3.726	***	Supported
H5	OP←TKS	0.387	0.093	4.145	***	Supported

Note: *** represents < 0.001.

**Figure 3.** The full model with path coefficient. *** represents < 0.001.

H1 states that relational capital has a positive effect on organizational performance. The path coefficient for relational capital is not significant ($p > 0.05$). Hence, H1 is not supported.

H2 states that relational capital has a positive effect on explicit knowledge sharing. The path coefficient for relational capital is significant ($p > 0.001$). Hence, H2 is supported.

H3 states that relational capital has a positive effect on tacit knowledge sharing. The path coefficient for relational capital is significant ($p < 0.001$). Hence, H3 is supported.

H4 states that explicit knowledge sharing has a positive effect on organizational performance. The path coefficient for explicit knowledge sharing is significant ($p < 0.001$). Hence, H4 is supported.

H5 states that tacit knowledge sharing has a positive effect on organizational performance. The path coefficient for tacit knowledge sharing is significant ($p < 0.001$). Hence, H5 is supported.

4.4.2. Mediating Effect Testing

Table 6 presents the results of testing mediating effects. In this table, IV represents an independent variable, M represents a mediating variable, and DV represents a dependent variable. Moreover, “IV→DV” represents the influence of an IV on a DV, “IV→M” represents the influence of an IV on an M, “M→DV” represents the influence of an M on a DV, and “IV + M→DV” represents the influence of an IV on an M and DV, as well as the influence of an M on a DV. The numerical value represents the path coefficient of the influence. Furthermore, *, **, and ***, respectively, represent different significances of the influence. If there is no *, it means that there is no influence. When an IV has a significant

influence on an M and DV, respectively, the M may produce a mediating effect. In this case of “IV + M→DV”, if an IV has no effect on a DV and an M has an effect on the DV, the M produces a full mediating effect on the effect of the IV on the DV. If both the IV and M have an effect on the DV, the M has a partial mediating impact. If M has no effect on the DV, it has no mediating effect [16].

Table 6. Results of mediating effect tests.

IV	M	DV	IV→DV	IV→M	IV + M→DV		Mediating
					IV→DV	M→DV	
RC	EKS	OP	0.596 ***	0.510 ***	0.304 *	0.304 ***	Partial
	TKS		0.534 ***	0.681 ***	0.162	0.491 ***	Full

Note 1: *** represents $p < 0.001$; * represents $p < 0.05$; no * represents $p > 0.05$. Note 2: IV represents independent variable; M represents mediator; DV represents dependent variable.

According to the above rules, relational capital has a significant impact on explicit knowledge sharing and organizational performance. Explicit knowledge sharing has a significant impact on organizational performance. It is shown that explicit knowledge sharing plays a partial mediating role between relational capital and organizational performance in the supply chain.

Relational capital is associated with tacit knowledge sharing, and tacit knowledge sharing is associated with organizational performance. However, relational capital has no significant effect on organizational performance. It is shown that tacit knowledge sharing plays a full mediating role between relational capital and organizational performance in the supply chain.

5. Discussion

The purpose of this study is to explore the role of relational capital in enhancing organizational performance in the supply chain and the mediating roles of explicit and tacit knowledge sharing in the relationships between relational capital and organizational performance. Using SEM to analyze the relationships among relational capital, explicit and tacit knowledge sharing, and organizational performance in the supply chain yields the following conclusions.

5.1. Effect of Relational Capital on Explicit and Tacit Knowledge Sharing

Relational capital is positively effect on both explicit and tacit knowledge sharing in the supply chain. This is an interesting finding. Previous studies have ignored the explicit and tacit characteristics of knowledge, and the transmission modes of explicit and tacit knowledge are quite different. There are many ways for explicit knowledge to spread, such as books, media, information system platforms, etc., while tacit knowledge is difficult to be effectively transmitted. Generally, it can only be transmitted through social communication between people. This finding is similar to that of Allameh [40], who finds that relational capital positively affects knowledge sharing. Gubbins and Dooley [59] add that the relational social capital factors of trust, norms, sanctions and social identification influence tacit knowledge-seeking interaction. Margaret and Nathaniel [41] argue relational capital can strengthen the impact of knowledge sharing. The establishment of relational capital can enhance the trust, friendship and mutual respect among the member enterprises, and provide a good atmosphere for realizing their cooperation and sustainable development of supply chain [37]. Relational capital is conducive to communication effectively between enterprises in the supply chain, and communication, trust, and commitment can promote explicit and tacit knowledge sharing [62]. Thus, relational capital can improve explicit and tacit knowledge sharing between enterprises in the supply chain.

5.2. Effect of Relational Capital on Organizational Performance

The results show that relational capital has no significant impact on organizational performance in the supply chain. Although this finding is similar to that of Zhang et al. [47] who find that relational capital does not increase sustainable organizational performance in China, they only consider from the perspective of individual enterprises. This is contrary to most previous studies. From the perspective of supply chain, supply chain is a whole composed of multiple stakeholder enterprises, and the relationship quality among enterprises affects the sustainable organization performance in the supply chain [32]. Wu et al. [34], Sambasivan et al. [36], and Zhao et al. [74] indicate relational capital is an important influence factor of organizational performance. Moreover, Abd-Elrahman and Kamal [75] indicate relational capital positively affects organizational performance, and service quality plays a mediating role between them. Yu et al. [37] indicate relational capital could indirectly improve financial performance via green supply chain management. This indicates that there are mediating factors between relational capital and organizational performance. Mediating effect analysis results of this study show that explicit knowledge sharing plays a partial mediating role between relational capital and organizational performance in the supply chain, and tacit knowledge sharing plays a full mediating role between them. This implies the establishment of relational capital does not directly affect organizational performance in the supply chain, but indirectly affects organizational performance via explicit and tacit knowledge sharing.

5.3. Effect of Explicit and Tacit knowledge Sharing on Organizational Performance

Explicit and tacit knowledge sharing have a positive impact on organizational performance in the supply chain. This finding is similar to that of Singh et al. [14], who find that knowledge sharing is critical to achieve sustainable competitive advantage and could improve organizational performance. Oyemomi et al. [7] add that explicit and tacit knowledge sharing improve a novel robust approach for the organizational performance. Ali et al. [46] argue that explicit and tacit knowledge sharing positively affect organizational performance. In the supply chain, the core enterprise promotes the cooperation between the member enterprises and seeks the overall optimization [6]. Explicit knowledge sharing can provide resources and technical support for the cooperation among member enterprises [16], and tacit knowledge sharing can provide experience and method support for collaboration [76]. Member enterprises can better understand each other via knowledge sharing, which can improve work efficiency [77]. Thus, explicit and tacit knowledge sharing in the supply chain can effectively promote organizational performance.

6. Conclusions

Relational capital is an important factor for the sustainable development of social relations in the supply chain, knowledge sharing is a promoting factor for the sustainable development of supply chain, and organizational performance is an important economic index to evaluate the sustainable development of supply chain. To maintain the sustainable development and sustainable competitive advantage of supply chain, this study proposes a theoretical model based on SEM and reveals the influence relationships between relational capital, explicit and tacit knowledge sharing, and organizational performance in the supply chain, as well as the mediating role of explicit and tacit knowledge sharing via an empirical analysis. The results show that relational capital is an effective way to solve the problem of tacit knowledge sharing among enterprises in the supply chain, and it is conducive to the improvement of organizational performance, which also verifies the close connection between social relationship sustainability and economic sustainability. Moreover, the view that knowledge sharing is an important factor for achieving sustainable development of the supply chain is verified again.

Combined with the above research conclusions and management practice, some valuable insights are found. The findings of this study can help managers better understand how relational capital affects organizational performance in the supply chain, which can

help them formulate effective relational capital strategies to achieve sustainable development of the supply chain. The findings indicate that relational capital in the supply chain has indirect influence on organizational performance through knowledge sharing. Although some studies suggest that establishing government relationships is more beneficial to promoting sustainable organizational performance than the cultivation of business relationships in China [47], with the improvement of marketization degree and the perfection of market norms, business relationships will become an important social resources, which affect social sustainability and economic sustainability. Thus, managers should strengthen the establishment of relational capital which can improve the trust, commitment and identity, etc., among enterprises in the supply chain, and create penalties to prevent damage to good relationships.

The results also recommend that explicit and tacit knowledge sharing between enterprises can promote the improvement of organizational performance in the supply chain, so as to realize the sustainable development of supply chain economy. The findings support previous assertions in the literature that knowledge sharing can maintain sustainable competitive advantage and is an important factor to create sustainable organizational performance [23]. Thus, managers should encourage explicit and tacit knowledge sharing among enterprises in the supply chain, and use advanced information technology to ensure the efficiency and accuracy of knowledge sharing.

At the same time, managers should be aware that tacit knowledge is difficult to be transferred and managed, it is more important than explicit knowledge in innovation [78], and sustainable development of supply chain and organizational performance depend on innovation. As the findings of this study indicate that relational capital can strengthen the trust and cooperation between enterprises in the supply chain and positively affect explicit and tacit knowledge sharing. Thus, managers need to focus on accumulating relational capital in the supply chain, and carry out various types of communication activities to encourage the exchange of experience between enterprises on the basis of good relations.

In addition, this study has made some contributions in both theory and practice, but it also has some limitations and needs further improvement in the future research. First, the sample data are collected from companies in China. In the future, more data can be collected to expand the generalization of the results. Second, industry types are not considered in the sample data analysis. In future research, data analysis can be carried out for a single industry. Third, Social, economic and environmental are the three pillars of sustainability. Only social and economic factors are considered in this study. In future studies, environmental factors such as culture, atmosphere, network structure, etc., in the supply chain can be added to the model.

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