



# Article The Impact of Value Cocreation on CSR Innovation and Economic Performance

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Abstract: Based on the resource-based view (RBV) and value cocreation theories, this study investigated how supplier value cocreation, intracompany value cocreation, and customer value cocreation influence corporate social responsibility (CSR) innovation and economic performance. We collected data from 200 manufacturers to test the proposed relationships. The results showed that value cocreation had different positive impacts on CSR; intracompany value cocreation had the greatest impact, followed by customer and supplier value cocreation. CSR did not have a significant positive effect on economic performance. Companies' innovation capacities completely mediated the relationship between CSR and economic performance. The findings of the analysis have theoretical and practical implications. Theoretically, this study broadens the research scope on CSR innovation and value cocreation. Practically, it helps companies realize that by sharing information, establishing cooperative relations, and conducting interactions with stakeholders, which can promote the implementation of CSR innovation practices, economic performance can be improved.

**Keywords:** corporate social responsibility (CSR); innovation capacity; value cocreation; economic performance

# 1. Introduction

The COVID-19 pandemic had a significant impact on the management of corporate social responsibility (CSR), especially on the implementation of public welfare projects and volunteer activities. The pandemic also forced companies to rethink the limits of their contributions to society and to look beyond donations of money or goods, public welfare campaigns, and poverty alleviation efforts. Many companies have begun to consider how they might take advantage of their existing capabilities to do more for society. For example, in just seven days, BYD Auto (the Chinese automobile manufacturer) managed to produce a mask machine with a daily production capacity of five million masks, creating the largest mass-production mask factory in the world in the early stages of the pandemic. One year after the launch of WeChat Sports, more than CNY 309 million of public welfare funds was exchanged through netizens' WeChat step donations. These examples show that traditional CSR no longer meets the needs of companies' sustainability goals. We must move further along a path of CSR innovation that combines commercial value and social value. CSR innovation embeds innovation capabilities into CSR practices. Companies participate in CSR innovation activity at the three levels of product, process, and business practice to maximize value while effectively eradicating social problems [1].

The resource-based view (RBV) theory indicates that a company is the collection of various resources; the construction of internal resources is conducive to the development of external resources and capabilities [2]. Companies need to build reliable relationships with their suppliers and customers due to uncertainty in the environment and the limitations of resources [3]. Companies should integrate internal and external resources and capabilities



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**Copyright:** © 2023 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (https:// creativecommons.org/licenses/by/ 4.0/). and develop supplier, enterprise, and customer value cocreation to ensure sustainable competitive advantages and economic benefits.

According to value cocreation theory, the value of products and services is typically created by companies as well as actors such as suppliers and customers; such actors establish close relationships as they participate in the process of value formation, which grants companies competitive advantages [4]. The reality that value cocreation occurs between stakeholders, such as suppliers and customers, in contexts of continuous interaction fosters collaborative processes and maintains mutually beneficial relationships between multiple parties. This, in turn, provides opportunities for open dialogue and exchange among stakeholders, who gain knowledge and capital with which to create value during the interaction process [5].

The global economic situation as well as epidemic prevention and control measures have increased the risks associated with the breakdown of industrial chains and supply chains, triggering the adjustment and transfer of some industrial chains. At the same time, the longer-term consequences include the further strengthening of upstream and downstream supply chain partnerships and increased incentives to implement CSR projects based on value cocreation. There are two broad reasons for this. First, social innovation is the core of CSR. In the changing business environment, companies can achieve win-win situations and improve their economic performance by pursuing green product standards, sustainable public welfare campaigns, and ecologically sound environmental policies [6]. Corporations with high CSR have achieved high brand value after innovation [7]. Second, establishing value cocreation through information sharing, stakeholder interaction, and the cultivation of relationships is important for the success of CSR innovation. Developing competitive advantages depends not only on the management of internal resources and capabilities but also on collaboration between companies and their partners [8]. By establishing mutually beneficial collaborative relationships, CSR innovation benefits both companies and stakeholders. Although there are theories and representative cases to draw upon, for example, in the SC Johnson case (the global cleaning products manufacturer), clear knowledge ("know what") about management theory and farming practices is teachable, while the implementation of practices ("know-how") and the development of product distribution systems call for continuous mutual study with the local community [9]. There is no clear method or path to guide companies in adopting socially responsible innovation practices.

The literature in this area has discussed the impact of value cocreation on CSR and innovation capability. However, there are still several gaps in understanding CSR that require further investigation. First, the literature shows that companies wishing to minimize their negative environmental and social impacts can benefit from CSR with the help of an open and transparent process to engage in in-depth communication and interaction with stakeholders [10]. However, few studies have examined the motivational factors and outcomes of CSR practices in cases involving relationships between multiple subjects, and these have tended to focus only on the company as a singular subject or on the binary relationship between company and customer [11]. Furthermore, they have tended not to describe how multiple-subject relationships-between supplier, company, and customer—may act as a mechanism in CSR. Second, research on CSR innovation has mainly focused on the content and results of companies' practices, and only descriptive case studies have been conducted [9,12]. As such, there remains a need for theory to inform empirical research. Furthermore, this line of research has not considered the mechanism of CSR and innovation capability in contexts of participation between multiple internal and external subjects. Therefore, it is of great importance to explore specific practices of innovation capability and to more fully ground empirical research on theoretical CSR. Finally, most studies have been classified according to the type of value cocreation activity, focusing only on a certain level of relationship or interaction [13,14], without examining value cocreation from the perspective of multiple stakeholders, considering its different dimensions, or

analysing the mechanisms and impacts of its intrinsic components according to the overall levels of knowledge sharing, relationships, and interaction.

Based on the RBV and value cocreation theory, this study discusses the impact of value cocreation behaviour on CSR and economic performance from the perspective of suppliers, intracompany relationships, and customers. It tests the mediating role of innovation capacity between CSR and economic performance and clarifies the effect of CSR innovation on economic performance from the perspective of value cocreation. This study makes the following contributions to the literature. First, the relationship between "doing good" and "making money" is discussed in depth from the perspective of value cocreation, which can help traditional companies transform into value cocreative companies. Second, it clarifies the path and mechanism of CSR innovation and delineates the CSR innovation model of "doing good while making money". More specifically, we aimed to answer the following questions: (1) do corporations that implement social innovation have significant value advantages? Additionally, (2) how can corporate innovation resources and capabilities be used to improve economic performance?

The rest of this study is organized as follows: Section 2 reviews the literature; presents a framework for discussing CSR innovation, value cocreation, and the connection between value cocreation and CSR; and develops the study's hypotheses. Section 3 explores the research method, and Section 4 provides statistical analysis and results. Section 5 probes into the theoretical and practical implications of the findings. The last section summarizes this study by discussing the limitations and implications for future research.

#### 2. Literature Review and Hypothesis Development

#### 2.1. Literature Review

#### 2.1.1. Corporate Social Responsibility Innovation

CSR refers to the economic, legal, ethical, and charitable expectations placed on companies by the societies in which they exist in a certain period; such expectations play an important role in companies' long-term sustainability. Based on Carroll's CSR pyramid model, this study defines the dimensions of CSR as economic, legal, moral, and charitable responsibility [15]. Innovation capacity is the specific ability or combination of technologies with which a company achieves established goals and obtains output benefits [16] or the ability of a company to acquire and use knowledge and technology and integrate external resources to improve products or services [17]. Following previous research [16,17], this study measured innovation capacity in four dimensions: product, organization, process, and marketing. Through the promotion of innovation capabilities, CSR can benefit a company's performance [18].

For companies, CSR combined with innovation capacity appears to be the best strategy to improve financial performance and be socially responsible [11,19,20]. CSR innovation is an innovative practice form of CSR oriented at solving social problems and meeting social demands [21]. This is a process in which companies and external stakeholders jointly create value [22] as well as comprehensive innovation in products, processes, and business practices [1]. Based on combining CSR and innovation capacity, this study defines CSR innovation as the activities by which companies aim to achieve the following goals: (1) pursuing profit and meeting social needs, practising CSR, and embedding various innovative means such as products, processes, or business practices in their systems; (2) creating profitable business solutions to tricky social problems; and (3) developing value cocreation strategies between companies and stakeholders.

Corporate social responsibility innovation (CSR innovation) involves both resource integration and innovation in product, charity, and business practices. At the product level, CSR innovation focuses more on the social effects of products, which can not only improve the economic outlook of an enterprise but also create new value for its customers, communities, and society. Product innovation can create customer value while consuming fewer resources and reducing environmental impacts [23]. At the charity level, CSR innovation conveys the enterprise's brand concept and value and produces emotional

connections, communication, and interaction with customers. It also strengthens the similarities and differences between the organization's new form and existing form of charity, which ultimately leads to a recognition of the new form of charity as playing a unique role. Changing customer perception is key to the organization's innovation. At the business practice level, eco-process innovation optimizes the efficiency of an organization's resource integration, improves the system's flexibility, reduces production and manufacturing costs, and produces eco-products that meet legal and policy standards, with the end results of reducing business risks and environmental impacts and attracting consumers and investors who prefer companies with good business ethics profiles [24]. Take Yili Group for example. Through research and development, AMBROSIAL shelf-stable yogurt was created, with a protein content of 30%, as product innovation; by establishing a dairy cow risk fund, dairy farmers could be compensated for unexpected losses to achieve innovation in public welfare organizations; and for each purchase of Jindian organic milk, an equivalent donation to charity was given, which could be used to protect 4.6 square meters of wetlands for one year.

### 2.1.2. Value Cocreation

Value cocreation theory proposes that companies participate in the value cocreation process with external collaborators such as suppliers and customers, which can significantly improve the efficiency and effectiveness of the value creation process and help companies obtain competitive advantages [25]. Of these competitive advantages, knowledge sharing, relationships, and interactions are considered key factors in value cocreation [26]. Knowledge sharing is a fundamental process of value cocreation [27]. Relationships refer to stakeholders establishing interdependent connections between two parties based on their common needs [28]. Interaction refers to a process or method that encourages stakeholders to take action and participate in or bring about a change, which is the behavioural trajectory during the value creation process [29]. A company should recognize the value that is created in the interaction with all stakeholders to achieve sustainable development [30]. For example, the "Taiwan Nongfu Brand" has cooperated with five-star hotels to incorporate golden needle herbs into exquisite dinners. Moreover, visitors can observe a 1.5-hectare field of golden needle flowers to mimic the experience of being a Taiwanese farmer for one day.

#### 2.1.3. Value Cocreation and CSR

Value cocreation in CSR is a strategic alliance among the company, suppliers, customers, and other stakeholders in responsibly, ethically, and innovatively achieving economicsocio-environmental gains [31]. From the perspective of cocreation, considering the relationship between CSR and customers can provide new insights for redefining the relationship between companies and customers [32]. By encouraging consumers' participation in value cocreation, CSR influences green purchase behaviour [33]. Different from CSR projects, shared value (CSV) projects are designed to create economic benefits for focal companies while generating social and environmental benefits; most CSV projects have created a remarkable economic benefit for their beneficiaries [8]. CSR value cocreation with customers contributes to sustainable development for tourism companies [34]; for example, gaming tourism industry companies create sustainability through the participation of a variety of stakeholder groups [35].

By practicing CSR activities and embedding innovation capability, CSR innovation can produce economic benefits while easing social problems and opening up new markets, establishing competitive advantages to achieve development that is differentiated from competitors. According to the RBV and value cocreation theory, the construction of a competitive advantage for companies not only demands the management of internal resources and capabilities but also depends on the cooperation and mutual benefit relationship between companies and external stakeholders. Value cocreation is the continuous interaction and dynamic knowledge and experience exchange between companies and external stakeholders to create a healthy relationship and enterprise competitiveness. Stakeholder value cocreation will help to enhance the level of CSR practice and innovation ability, thus improving the economic performance of companies. Therefore, this study constructed a conceptual model of "value cocreation  $\rightarrow$  (corporate social responsibility  $\rightarrow$  innovation capability)  $\rightarrow$  economic performance"; introduced knowledge sharing, relationships, and interactions among suppliers, companies, and customers as driving factors; and discussed the mediating role of innovation capability between CSR and economic performance to enrich the impact of value cocreation on CSR innovation and economic performance. This model is depicted in Figure 1.



Figure 1. The conceptual model.

#### 2.2. Hypothesis Development

2.2.1. Supplier, Intracompany, and Customer Value Cocreation

Knowledge sharing provides new ideas for production and creativity for value cocreation and interactive behaviour [36]. Value creation will take place when relationship collaboration occurs, where organizations are closely involved between upstream and downstream activities [37]. Firms in a relationship have the same goals, cooperate to achieve improvement, and enhance innovation solutions [37]. To achieve value cocreation, interaction is the crux of the emerging reality [38]. Interaction occurs among multiple stakeholders including firms, customers, resources, and the environment [4].

For suppliers, knowledge sharing between suppliers and companies can enhance their knowledge reserve and knowledge utilization level and then allow them to interact better and fulfil codesign and coproduction [39]. Suppliers help companies become highly interconnected, increasing the willingness of members to invest effort and time in knowledge sharing, which facilitates deeper interactions among members and promotes a willingness to establish long-term cooperation [40].

For intracompany relationships, knowledge sharing is necessary to fully utilize knowledge, resulting in a synergy effect and achieving adequate communication and interaction within organizations [41]. With the characteristic of tight connections, strong associations motivate members of companies to participate in utilizing each other's knowledge resources, sharing, and interactions [42].

For customers, through knowledge sharing to strengthen communication and interactions with companies, it is possible to guide customers to express their needs in a certain aspect and to emphasize aspects that customers may not have thought about in their interactions with companies [43]. Key customers with long-term and stable business relationships are more likely to engage in knowledge sharing, communication interactions, and relationship-specific investments [40].

Therefore, based on the perspective of supplier value cocreation, intracompany value cocreation, and customer value cocreation, this study proposes the following hypotheses:

**Hypothesis 1a (H1a).** *Knowledge sharing has a positive impact on supplier participation in interactions.* 

**Hypothesis 1b (H1b).** *Relationships have a positive impact on supplier participation in interactions.* 

**Hypothesis 2a (H2a).** *Knowledge sharing has a positive impact on intracompany participation in interactions.* 

**Hypothesis 2b (H2b).** *Relationships have a positive impact on intracompany participation in interactions.* 

**Hypothesis 3a (H3a).** *Knowledge sharing has a positive impact on customer participation in interactions.* 

**Hypothesis 3b (H3b).** *Relationships have a positive impact on customer participation in interactions.* 

# 2.2.2. Impact of Value Cocreation on CSR

Many CSR practices involving suppliers, customers, and other stakeholders have fully embodied the concept and processes of value cocreation [8]. Cocreation can sometimes be challenged when members within the value chain have conflicting goals when engaging in cooperation and cocreation, leading to coopetition [32,44]. Interaction relationships narrow the distance between companies and stakeholders. Enhancing value cocreation and stakeholder cooperation and interaction positively affects CSR to some extent [45].

Close communication with suppliers is vital for any company wishing to apply a value chain approach to develop a sustainability strategy [46]. If a CSR supplier can influence the customers' purchasing patterns, then suppliers' focus on CSR can probably build the customers' value cocreation behaviour [32].

Simpson et al. argued that CSR activities under cocreation can help improve the perception of CSR within the company [47]. Engaging in CSR cocreation can lead employees who view themself as interconnected with others to report higher levels of CSR perceptions, subsequently exhibiting increased CSR [47].

Customers can perceive the interaction as caring for themselves and other stakeholders (including employees and communities) [47], while the low level of interaction between customers and companies prevents CSR information from being communicated effectively, which negatively affects customer engagement in CSR activities and the development of CSR by companies [48]. Several studies have shown that product/service development processes aiming to engage consumers through cocreation lead to better consumer experiences, increased consumer loyalty [44], and a strengthened company connection and trust with its customers [49,50].

Therefore, based on the perspective of value cocreation, this study proposes the following hypotheses:

**Hypothesis 4a (H4a).** *Value cocreation centred on supplier participations in interaction has a positive impact on CSR.* 

**Hypothesis 4b (H4b).** *Value cocreation centred on intracompany participation in interactions has a positive impact on CSR.* 

**Hypothesis 4c (H4c).** *Value cocreation centred on customer participation in interactions has a positive impact on CSR.* 

#### 2.2.3. Impact of CSR on Economic Performance

Economic performance is the capability of manufacturing companies to reduce costs related to raw materials, energy consumption, waste disposal, waste discharge, and environmental fines [51]. The main motivation of companies to fulfil their social responsibility, such as implementing environmental management practices, focuses on reducing business risks and solving environmental problems, which can, in turn, establish competitive ad-

vantages and provide new value-added channels for core businesses [52]. Existing studies (using either quantitative or qualitative analyses) have presented numerous inconsistent views on the relationship between CSR and economic performance. The reason for this phenomenon may mainly be due to factors such as different research methods, indicator settings, and sample selection by scholars on CSR and economic performance [53]. Good relationships with stakeholders based on corporate reputation can add distinctive value to the company and can enhance purchasing of the company's goods. Therefore, CSR investments can lead to better economic performance. However, CSR investments require additional costs, representing a negative effect on economic performance by increasing the company's expenditures [54].

The findings in the literature usually indicate a positive and significant effect of CSR on economic performance [55,56]. Johnson & Johnson's case study demonstrated how CSR and sustainability improved the company's economic performance [57]. Additionally, empirical evidence shows the positive effects of several CSR practices on economic performance [58]. Investing in CSR activities can improve a company's economic performance compared to competitors that do not engage [56].

Therefore, this study proposes the following hypothesis:

**Hypothesis 5a (H5a).** CSR has a positive impact on economic performance.

#### 2.2.4. CSR and Innovation Capacity

The fulfilment of social responsibility unblocks corporate channels, improves flexibility and responsiveness to changes in the external environment, and leads to the cultivation of innovation capabilities and commercial markets [21].

Wu et al. [59] found that CSR can stimulate positive environmental behaviour from a resource-based viewpoint, which can improve the innovation capacity of companies and further promote their innovative activities. In addition, other studies have shown that CSR promotes corporate innovation [60,61].

The relationship between CSR and innovation capability has mainly been studied in the context of CSR and economic performance [19,61]. CSR increases the incentive for companies to invest in innovation; innovative products/services face less competition when entering the market; and companies with innovative capabilities face a lower level of competition [62], which allows companies to increase their profits. Thus, CSR is an important driving mechanism for companies to improve their innovation capabilities, efficiency, and effectiveness [63]. Adopting a strategy that combines CSR and innovation can enable companies to gain a competitive advantage and improve their economic performance [11,19,20]. Therefore, the impact of CSR on economic performance is improved through increased innovation capabilities [63]. Thus, we propose the following hypotheses:

**Hypothesis 5b (H5b).** *CSR has a positive impact on a company's innovation capacity.* 

**Hypothesis 5c (H5c).** Innovation capacity plays an intermediary role between CSR and economic performance.

#### 3. Research Methodology

#### 3.1. Questionnaire Design and Measures

This study focused on four core variables (shown in Table 1): CSR, value cocreation, innovation capacity, and economic performance. The original items for the measurement of the core variables were all derived from mature scales, adapted from authoritative journals in the management field, and matched the research background. The initial questionnaire was formed through back-translation. At the same time, 13 enterprises in Jiangsu and Zhejiang were contacted for prequestionnaire testing. First, senior management personnel

from the companies, such as general managers and department heads, were contacted, the intention of the survey was explained, and the target candidates were identified. Second, the contacted companies were asked to invite relevant personnel to complete the questionnaire and record the feedback. Finally, according to the test results, questionnaire items were added, deleted, and modified. Specifically, the reliability and validity of the items used in this study were tested, inaccurate or inappropriate statements were modified or deleted, and finally, a formal questionnaire was issued.

Core Variables	Dimensions Measurement Item Core Va		Core Variables	Dimensions	Measurement Item
CSR [16]	Economic Legal and ethical Charitable	3 items 4 items 5 items	Innovation capacity [16,17]	Product innovation Organization innovation Process innovation Marketing innovation	4 items 4 items 4 items 4 items
Value cocreation [36]	Knowledge sharing Interaction Relationship	4 items 4 items 4 items	Economic performance [22,64]	Operating income R&D investment Product quality	1 item 1 item 1 item

Table 1. Measurement of variables. (Item details in Appendix A).

Appendix A details the measurement scales of the core variables. Additionally, a seven-point Likert scale was used for measurement. One represented "strongly disagree" or "not at all" and seven represented "strongly agree" or "to a very great extent".

#### 3.2. Data Collection

In this study, manufacturers in Beijing, Hebei, Shandong, Jiangsu, Zhejiang, Fujian, Guangdong, and other eastern regions of China were mainly investigated. The main reasons are as follows: first, compared with the central and western regions, the eastern region exhibits a stronger and more rapid economic development capacity; second, the manufacturing and tertiary industries in the eastern region are relatively advanced, while the central and western regions lag; finally, the degree of opening up and the ability to absorb foreign investment in the eastern region are much higher than those in the central and western regions. The level of CSR innovation in a given region is closely related to the region's market environment and the level of economic development. Compared with the central and western regions of China, CSR innovation is more popular in the eastern region, and the practice is relatively mature there. For these reasons, taking the manufacturing companies in the eastern region as the main survey object was the best way to obtain data suitable for the present research purposes and to ensure the representativeness of the sample.

First, we collected data from manufacturers in China using a random sampling method. Then, we asked for their consent to participate in the survey by telephone or e-mail and to identify the key informants who would know their companies' CSR innovation activities and performance. Most key informants (90%) had been in their positions for more than three years, and the typical positions included general managers, CEOs, or department senior management personnel (such as supply chain managers and operation managers). We frequently contacted them to decrease potential missing values and to increase the response rate when waiting for their responses [65]. Eventually, 200 completed and usable questionnaires were received. Profiles of responding companies are shown in Table 2. Table 2 shows that 84% of the responding companies were located in the eastern region; 77% had been operating in the area for more than 10 years, thus ensuring the representativeness of the samples.

Table 2. Descriptive statistical analysis of sample companies.

Region	C	perating	Time (yea	r)		0	wnersh	nip			Nun	nber of Emp	loyees	
(Sample Size)	<10	11–20	21–30	>30	S	С	Р	JV	F	<200	200-499	500-999	1000-4999	$\geq$ 5000
East (n = 168)	41	74	30	23	27	2	108	13	18	66	44	15	27	16
Central $(n = 24)$	4	9	8	3	4	-	18	2	-	11	5	-	7	1
West $(n = 8)$	-	2	1	5	1	-	6	1	-	3	1	2	1	1

Region		Fixed Assets (CNY 10 million)					2018 Sales (CNY 10 million)					
(Sample Size)	<0.5	0.5–1	1–2	2–5	5–10	$\geq$ 10	<0.5	0.5–1	1–2	2–5	5–10	$\geq$ 10
East (n = 168)	1	11	16	32	30	78	-	3	15	27	29	94
Central $(n = 24)$	-	1	4	3	4	12	1	1	1	4	1	16
West $(n = 8)$	1	1	-	-	1	5	-	1	1	-	-	6

# Table 2. Cont.

Note: Ownership: S, state-owned company; C, collective company; P, private company (mainland China); J, joint venture; F, foreign company.

#### 4. Analysis and Results

# 4.1. Unidimensionality, Reliability, and Validity Test

As shown in Table 3, the rotated factor loadings of all the measures of CSR, innovation capability, value cocreation, and economic performance were above 0.50 without prominent cross-loadings; thus, unidimensionality was ensured in this study.

Table 3. Confirmatory factor analysis.

Item	Loading	Cron-bach's $\alpha$	Composite Reliability	Average Variance Extracted	Item	Loading	Cron-bach's $\alpha$	Composite Reliability	Average Variance Extracted
Corporate Social Responsibility EC1 EC2 EC3 LE1 LE2 LE3 LE4 SP1 SP2 SP3 SP4 SP5	0.818 0.752 0.755 0.729 0.691 0.756 0.843 0.732 0.818 0.711 0.783	0.873	0.938	0.560	Supplier Value Cocreation SKS1 SKS2 SKS3 SKS4 SIT1 SIT2 SIT3 SIT4 SRP1 SRP1 SRP2 SRP3 SRP4	0.799 0.777 0.771 0.772 0.740 0.792 0.725 0.666 0.764 0.717 0.778 0.733	0.930	0.940	0.568
Product Innovation PT1 PT2 PT3 PT4	0.820 0.840 0.795 0.708	0.859	0.871	0.628	Intracompany Value Cocreation IKS1 IKS2 IKS3 IKS4	0.670 0.777 0.709 0.698	0.915	0.928	0.520
Organizational Innovation OE1 OE2 OE3 OE4	0.604 0.792 0.626 0.630	0.753	0.760	0.445	- IIT1 IIT2 IIT3 IIT4 IRP1	0.709 0.711 0.736 0.795 0.697			
Process Innovation PS1 PS2	0.763 0.788	0.835	0.836	0.561	IRP2 IRP3 IRP4	0.719 0.812 0.594			
PS3 PS4	0.740 0.702				Customer Value Cocreation CKS1	0.738	0.910	0.941	0.573
Marketing Innovation MT1 MT2 MT3 MT4	0.677 0.853 0.790 0.706	0.839	0.844	0.578	CKS2 CKS3 CKS4 CIT1 CIT2	0.744 0.772 0.790 0.725 0.748			
Economic Performance EP1 EP2 EP3	0.774 0.738 0.750	0.806	0.908	0.527	CIT3 CIT4 CRP1 CRP2 CRP3 CRP4	0.718 0.762 0.738 0.745 0.885 0.703			

Table 3 also shows that the Cronbach's alpha and composite reliability values were above 0.80 and 0.70, respectively, thus confirming the reliability of each construct [66]. Although the Cronbach's alpha value for organizational innovation was 0.753 (i.e., slightly lower than 0.80), it was within an acceptable range.

There are three types of validity: content validity, convergent validity, and discriminant validity. First, all the items were adapted from the existing literature, thus ensuring preferable content validity. Second, we used confirmatory factor analysis (CFA) to check convergent and discriminant validity [66]. As shown in Table 3, the factor loadings were above 0.50, with composite reliability and average variance extracted values above 0.70 and 0.50, respectively. The average variance extracted value of organizational innovation ability was 0.445, which is slightly lower than 0.5, although each of them was in the acceptable range, indicating good convergent validity [66]. As shown in Table 4, the square root of the average variance extracted from each factor was greater than the correlation coefficient between one factor and the other factors, meaning that each scale had good discriminant validity [66]. Table 4 also summarizes the means, standard deviations, and correlation coefficients of all the constructs; all the indicators were acceptable.

Table 4. Correlations, means, and standard deviations.

Variable	SVC	IVC	CVC	CSR	IC	EP
Supplier value cocreation (SVC)	0.754					
Internal value cocreation (IVC)	0.540 **	0.721				
Customer value cocreation (CVC)	0.739 **	0.646 **	0.757			
Corporate social responsibility (CSR)	0.493 **	0.688 **	0.490 **	0.749		
Innovation capacity (IC)	0.475 **	0.686 **	0.513 **	0.678 **	0.750	
Economic performance (EP)	0.422 **	0.384 **	0.352 **	0.402 **	0.528 **	0.726
Mean	5.485	5.670	5.566	5.845	5.453	4.930
Standard deviation	0.885	0.787	0.783	0.679	0.816	1.142

Note: (1) significance levels (two-tailed tests): \*\*\* p < 0.001, \*\* p < 0.01, \* p < 0.05; (2) the numbers in bold and italics on the diagonal are the square roots of the AVE for the corresponding factors.

#### 4.2. Hypothesis Analysis

A structural equation model (SEM) with AMOS 21.0 was used to test the proposed hypotheses in the conceptual model. The fit indices are shown in Table 5. From the perspective of supplier value cocreation, the model fit indices were  $\chi^2/df = 2.083$ , RMSEA = 0.074, NFI = 0.823, and CFI = 0.898; from the perspective of internal value cocreation,  $\chi^2/df = 1.940$ , RMSEA = 0.069, NFI = 0.827, and CFI = 0.907; and from the customer perspective,  $\chi^2/df = 1.966$ , RMSEA = 0.070, NFI = 0.822, and CFI = 0.902. This indicates that the model is acceptable. Figures 2–4 and Tables 6–8 show the standard path coefficients of the structural model.

	Table 5	. Fit index c	of the model l	based on '	"Supplier	/Intracompany/	/Customer"	value cocreation
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	Fit Index	$\chi^2/df$	RMSEA	GFI	NFI	TLI	CFI
Standard value		<3	< 0.08	>0.8	>0.8	>0.8	>0.8
	Supplier value cocreation	2.083	0.074	0.817	0.823	0.885	0.898
Actual value	Internal value cocreation	1.940	0.069	0.834	0.827	0.895	0.907
	Customer value cocreation	1.966	0.070	0.836	0.822	0.890	0.902

As shown in Figure 2 and Table 6, the standardized path coefficient between knowledge sharing and interaction was 0.840 (p < 0.001), suggesting that knowledge sharing between suppliers and companies had a positive impact on supplier participation in interaction, i.e., H1a was validated. The standardized path coefficient between the relationship and interaction was 0.491 (p < 0.001), indicating that the relationship between suppliers and companies had a positive impact on supplier participation in interaction, i.e., H1b was validated. Meanwhile, the standardized path coefficient between supplier participation in interactive value cocreation and CSR was 0.457 (p < 0.001), indicating that suppliers' value cocreation behaviour had a positive impact on CSR, i.e., H4a was validated. The standardized path coefficients between CSR and economic performance and between CSR and innovation capability were 0.162 (p > 0.05) and 0.719 (p < 0.001), respectively, indicating that the path of the effect of CSR on economic performance did not pass the test, whereas CSR had a positive impact on innovation capacity. Therefore, H5a was not validated, although H5b was validated.



**Figure 2.** Model based on "Supplier value cocreation  $\rightarrow$  (CSR  $\rightarrow$  Innovation capacity)  $\rightarrow$  Economic performance". Note: (1) the solid line indicates that the path is significant; the dashed line indicates that the path is not significant; (2) \*\*\* *p* < 0.001, \*\* *p* < 0.01, \* *p* < 0.05.

**Table 6.** Hypothesis test results for the model based on "Supplier value cocreation  $\rightarrow$  (CSR  $\rightarrow$  Innovation capacity)  $\rightarrow$  Economic performance".

Hypotheses	<b>S.F.</b>	S.E.	C.R.	p	Results
Knowledge sharing $\rightarrow$ Interaction (H1a)	0.840	0.083	8.316	***	Supported
Relationship $\rightarrow$ Interaction (H1b)	0.491	0.063	6.421	***	Supported
Interaction $\rightarrow$ CSR (H4a)	0.457	0.079	4.383	***	Supported
$\text{CSR} \rightarrow \text{Economic performance (H5a)}$	0.162	0.212	1.325	0.185	Rejected
$CSR \rightarrow$ Innovation capacity (H5b)	0.719	0.169	5.474	***	Supported
$CSR \rightarrow$ Innovative capacity $\rightarrow$ Economic performance (H5c)	_	_	_	_	Supported, full mediation

Note: (1) S.F., standardized factor; S.E., standard error; C.R., critical ratio; *p*, significance; (2) \*\*\* *p* < 0.001.

As shown in Figure 3 and Table 7, the standardized path coefficient between knowledge sharing and interactions was 0.487 (p < 0.001), suggesting that knowledge sharing between company departments had a positive impact on their participation in interactions, i.e., H2a was validated. The standardized path coefficient between the relationship and interaction was 0.533 (p < 0.001), indicating that the relationship between company departments had a positive impact on intracompany participation in interactions, i.e., H2b was validated. Meanwhile, the standardized path coefficient between value cocreation with intracompany participation in interaction and CSR was 0.782 (p < 0.001), indicating that intracompany value cocreation had a positive impact on CSR; thus, H4b was supported. The standardized path coefficients between CSR and economic performance and between CSR and innovation capability were 0.133 (p > 0.05) and 0.769 (p < 0.001), respectively, indicating that the path of the impact of CSR on economic performance did not pass the test, whereas CSR had a positive impact on innovation capacity. Therefore, H5a was not validated, but H5b was validated.



**Figure 3.** Model based on "Internal value cocreation  $\rightarrow$  (CSR  $\rightarrow$  Innovation capacity)  $\rightarrow$  Economic performance". Note: (1) the solid line indicates that the path is significant; the dashed line indicates that the path is not significant; (2) \*\*\* p < 0.001, \*\* p < 0.01, \* p < 0.05.

**Table 7.** Hypothesis test results for the model based on "Intracompany value cocreation  $\rightarrow$  (CSR  $\rightarrow$  Innovation capacity)  $\rightarrow$  Economic performance".

Hypotheses	S.F.	S.E.	C.R.	р	Results
Knowledge sharing $\rightarrow$ Interaction (H2a)	0.487	0.133	4.071	***	Supported
Relationship $\rightarrow$ Interaction (H2b)	0.533	0.151	4.220	***	Supported
Interaction $\rightarrow$ CSR (H4b)	0.782	0.088	6.701	***	Supported
$\text{CSR} \rightarrow \text{Economic performance (H5a)}$	0.133	0.209	1.014	0.310	Rejected
$CSR \rightarrow$ Innovation capacity (H5b)	0.769	0.151	6.076	***	Supported
$\text{CSR} \rightarrow \text{Innovative capacity} \rightarrow \text{Economic performance (H5c)}$	_	_	_	_	Supported, full mediation

Note: (1) S.F., standardized factor; S.E., standard error; C.R., critical ratio; *p*, significance; (2) \*\*\* *p* < 0.001.

As shown in Figure 4 and Table 8, the standardized path coefficient between knowledge sharing and interaction was 0.785 (p < 0.001), suggesting that knowledge sharing between customers and companies had a positive impact on customer participation in interaction; therefore, H3a was validated. The standardized path coefficient between the relationship and interaction was 0.620 (p < 0.001), indicating that the relationship between customers and companies had a positive impact on customer participation in interaction; thus, H3b was validated. Meanwhile, the standardized path coefficient between value cocreation with customer participation in interaction and CSR was 0.499 (p < 0.001), indicating that customers' value cocreation behaviour had a positive impact on CSR; thus, H4c was validated. The standardized path coefficients between CSR and economic performance and between CSR and innovation capability were 0.153 (p > 0.05) and 0.716 (p < 0.001), respectively, indicating that the path of the effect of CSR on economic performance did not pass the test, whereas CSR had a positive impact on innovation capacity. Therefore, H5a was not validated, but H5b was validated.

**Table 8.** Hypothesis test results for the model based on "Customer value cocreation  $\rightarrow$  (CSR  $\rightarrow$  Innovation capacity)  $\rightarrow$  Economic performance".

Hypotheses	<b>S.F.</b>	S.E.	C.R.	p	Results
Knowledge sharing $\rightarrow$ Interaction (H3a)	0.785	0.094	5.450	***	Supported
Relationship $\rightarrow$ Interaction (H3b)	0.620	0.075	5.106	***	Supported
Interaction $\rightarrow$ CSR (H4c)	0.499	0.136	3.875	***	Supported
$\text{CSR} \rightarrow \text{Economic performance (H5a)}$	0.153	0.220	1.260	0.208	Rejected
$CSR \rightarrow$ Innovation capacity (H5b)	0.716	0.180	5.309	***	Supported
$CSR \rightarrow$ Innovative capacity $\rightarrow$ Economic performance (H5c)	_	_	_	_	Supported, full mediation

Note: (1) S.F., standardized factor; S.E., standard error; C.R., critical ratio; *p*, significance; (2) \*\*\* *p* < 0.001.



**Figure 4.** Model based on "Customer value cocreation  $\rightarrow$  (CSR  $\rightarrow$  Innovation capacity)  $\rightarrow$  Economic performance". Note: (1) the solid line indicates that the path is significant; the dashed line indicates that the path is not significant; (2) \*\*\* *p* < 0.001, \*\* *p* < 0.01, \* *p* < 0.05.

### 4.3. Mediating Effect Analysis

This study utilized the macro PROCESS program developed by Hayes et al. [67] to test the intermediary effect. From the results in Table 9, the indirect effects of CSR on economic performance ranged from 0.327 to 0.784 (p = 0.001 < 0.05), i.e., they did not contain 0, which meant that there was a mediating effect and that it was significant. Thus, the mediating effect of innovation capacity on the relationship between CSR and economic performance was significant. The direct effects of CSR on economic performance ranged from 0.137 to 0.408 (p = 0.329 > 0.05), which included 0 and therefore indicated that the direct effect was not significant, i.e., innovation capacity fully mediated the impact of CSR on economic performance. Therefore, H5c was verified, as shown in Tables 6–8.

**Table 9.** Analysis of the mediation effect of bootstrap method.

Path			Effect			Conclusion
			Indirect Ef	ffect		
	β	Lower	Upper	р	Sig.	
$\mathrm{CSR}  ightarrow \mathrm{Innovative\ capacity}  ightarrow$	0.540	0.327	0.784	0.001	Significant	Significant, full mediation
Economic performance			Direct Eff	ect		
	β	Lower	Upper	р	Sig.	
	0.135	-0.137	0.408	0.329	Not Significant	

Note: The bootstrap process was repeated 5000 times;  $\beta$  is the standardized coefficient. Source: the results were calculated based on PROCESS.

# 5. Discussion

### 5.1. Theoretical Contributions

This study explored the mechanisms influencing value cocreation behaviours of suppliers, intracompany relationships, and customers on CSR innovation and economic performance and examined the role of innovation capacity in mediating the relationship between CSR and economic performance.

#### 5.1.1. Value Cocreation and CSR

Value cocreation has a positive effect on CSR, a finding supported by previous studies performed by Tuan et al. [34] and Simpson et al. [47]. The empirical results of this study show that suppliers, intracompany factors, and customers all had a positive impact on CSR, but the value cocreation behaviour of intracompany factors had the greatest impact on CSR.

The reasons for this result are as follows. First, intracompany participation in interactions is an "internal" type of corporate resource, which is easier and more efficient to absorb and transform than "external" capabilities. Companies can use their internal resources to study and control their internal environment to improve their internal absorption, integration, and innovation capabilities, create core competencies that are in line with their development direction, and improve CSR [68].

Second, friendly relationships between departments can foster cross-functional synergies within companies [25,69,70], combining ideas to stimulate innovation and enhance awareness of social responsibility. Interdepartmental engagement can help companies better collaborate with their stakeholders to fulfil their social responsibility, and the integration of knowledge shared by stakeholders and corporate production will assuredly provide companies with solutions to meet the needs of multiple responsibilities and social issues.

Third, the focus is on promoting the integration of internal resource elements and enhancing cross-functional interaction and communication among departments and employees within the company [71], through which core values are reflected [72]. The more frequently internal and external value cocreation resources are used, the more conducive it is to improving the efficiency of the transformation of results to promote CSR practices, which thus enhances corporate responsibility awareness. Specifically, this study builds on previous research on the relationship between value cocreation and CSR by identifying three value cocreation factors (knowledge sharing, relationships, and interactions) from the value cocreation perspective of suppliers, intracompany relationships, and customers as drivers [32,47].

### 5.1.2. CSR and Economic Performance

The findings of studies on the correlation between CSR and economic performance remain contradictory [73] and include positive [55,74], negative [75], and U-shaped relationships [76]. These inconclusive findings are due to the tendency of different scholars to focus on different factors and characteristics [77]. From the perspective of value cocreation, this study found that CSR had no significant positive impact on economic performance. Companies need to devote a certain amount of resources to fulfilling their social responsibility to suppliers and customers; such outlays may establish a good company image in the short term and lead to sales growth [78] but generate a negative impact on the company's economic performance in the long term [79].

First, the blind investment of resources in socially responsible behaviour is not conducive to improving a company's economic performance, and although it may seem to increase the company's reputation in the long term, the increased costs of CSR activities may lead to a decline in the company's financial performance [19]. This can hinder the development of its core business and the expansion of emerging businesses, which can affect the company's sustainable development.

Second, in the process of fulfilling their social responsibility, companies face many risks, such as uncertain market conditions and variability in laws and policies. The risk factors in this process may not be significant, but they affect the relationship between CSR and corporate economic performance [80]. This damage will be transmitted between upstream and downstream companies along the supply chain, leading to the bullwhip effect, whereby the damage worsens, expands and ultimately harms the entire supply chain. Therefore, it is unreasonable for companies to blindly increase the level of resources invested in CSR, and it is necessary to match the company's development strategy with an appropriate CSR resource allocation plan to ensure that the company develops sustainably.

#### 5.1.3. CSR, Innovation Capacity, and Economic Performance

In this study, innovation capacity fully mediated the relationship between CSR and economic performance. This result is consistent with established theory and evidence from research on CSR innovation [11,12,20]. First, in the face of the challenges presented by global barriers to social responsibility, proactively engaging in social responsibility will

help reduce the constraints of companies on quality, the environment, and other standards, improve their access to the industry to increase their investment in R&D and innovation, and enhance their innovation capacity. At the same time, improving their innovation capacity enables companies to offer products and services that meet the needs of the market and consumers [1], which is conducive to expanding their product market share; improving their economic performance, value, and investment efficiency [75]; and promoting their sustainable development.

Second, companies establish close collaborative relationships with stakeholders to enhance information sharing and knowledge flow between companies to promote innovation, which, in turn, creates economic benefits for companies. This is possible specifically because innovation capacity and CSR can build, coordinate, and consolidate trust relationships between companies and stakeholders [50]. Stable collaborative relationships can reduce uncertainty and opportunistic behaviours in the transaction process, significantly reduce costs, shorten order times, and improve productivity and product quality. This will help companies to establish a good social image and brand reputation and bring them additional economic benefits. Based on the studies performed by Martinez et al. [63] and Palacios et al. [20], this study clarifies the mechanism of corporate CSR on innovation capability and economic performance based on the value cocreation perspective and provides a reference for decision making for core companies and their collaborative innovation upstream and downstream.

#### 5.2. Managerial Implications

This study showed that CSR innovation could achieve the sustainable business goal of "doing good while making money", from the perspective of value cocreation among suppliers, intracompany participants, and customers. The results have the following management implications for practice.

First, we advocate for supply chain coordination. Suppliers, intracompany participant, and customer value cocreation behaviours are all conducive to companies' fulfilment of their social responsibility. The failure of any one company to fulfil its social responsibility will have a negative impact on the whole supply chain. For this reason, it is necessary to encourage companies to practice socially responsible innovation throughout the supply chain. CSR innovation should realize knowledge cocreation, relationships, and interactions between the company and its stakeholders to achieve the goal of creating economic and social value. Changes in the sources of company value creation have shifted the focus of management from the company's internal production processes to the interactive creation of stakeholders, and the company's customer-oriented organizations interact with stakeholders within the company [34] and create new ways through interaction with stakeholders while simultaneously being conducive to achieving sustainable value creation [5,81]. To stabilize the economic market, it needs to stabilize the industrial chain and supply chain. The government should formulate policies on industrial chain and supply chain construction. It should build a win-win interest community of the supply chain, support the guiding role of leading firms, and improve the resilience and safety of the industrial chain and supply chain to promote high-quality economic development.

Second, the aim should be to promote a company's core business. The one-sided implementation of social responsibility is not conducive to the sustainable development of companies. CSR should be regarded as one component of a company's core business, and commercial value should be integrated into CSR and management activities. In addition, focusing on sustainable relationships and good CSR practices can contribute to establishing emotional connections with stakeholders, lowering the potential risks of CSR, and achieving long-term corporate and social development [80,82]. Therefore, the strategic approach of CSR requires close integration between the company's competitive strategy, CSR practices, and all the core business processes. In this sense, CSR represents an effective way to attract suppliers, customers, and other core stakeholders, helping the company to provide intangible assets such as reputation, resources related to corporate

capabilities, and knowledge resources. The government should formulate more policies to promote the implementation of CSR, such as green and low-carbon policies, corporate public welfare, etc. Through subsidies and regulations, the government guides enterprises to go beyond the traditional concept of "profit-oriented". The government should advocate that companies make contributions to the environment, consumption, and society in the process of pursuing profits.

Third, comprehensive innovation capabilities should be cultivated. Innovation capacity plays a key role in the relationship between CSR and economic performance. In China's new "double cycle" policy, local companies should firmly grasp the transformative application of digital technologies such as big data, artificial intelligence, and blockchain in CSR to increase their international competitiveness in facing counter-globalization and the complex environment of international social developments. For example, a company with a social responsibility orientation will be regarded by its stakeholders as having high-quality products. Through product innovation or process innovation, the company can promote social responsibility attributes or characteristics of their brand or product and win the trust of stakeholders, thereby creating new profit points. Furthermore, enterprises can benefit from integrated innovation. Through communication and interaction with external stakeholders, new knowledge can be integrated into the innovation process. At the same time, it is conducive to the efficiency of internal resource allocation decision making that can acquire and integrate knowledge to support innovation and ultimately enhance the company's competitive advantage and profitability. The government should promote the deep integration of the digital economy and CSR innovation practices, vigorously promote independent innovation, and promote breakthrough key technology. In addition to promoting the digital transformation of CSR, finance is also indispensable. Financial institutions such as banks and insurance companies should play a supporting role in CSR innovation.

#### 6. Conclusions, Limitations, and Future Research

This study developed a theoretical model of the impact of the supplier, intracompany participants, and customer value cocreation behaviours on CSR and economic performance, and it introduced innovation capacity as a mediating variable. The results showed that the degree of influence of each subject's value cocreation was, in descending order, intracompany factors, customers, and suppliers. The implementation of CSR can enhance a professional image in the short term, but it will have a negative impact on its economic performance in the long term. Companies can strengthen their interactions with stakeholders and improve their economic performance by promoting innovative practices, which provide a theoretical basis and practical guidance to better achieve CSR.

This study also has some limitations that offer opportunities for future research. First, the measurement items of CSR innovation have certain limitations. At present, CSR innovation is the integration of CSR and innovation capability. Future research could design and test new measurement indicators to fully reveal the connotations and categories of CSR innovation.

Second, there are some limitations on performance type. This study only considered economic performance but did not involve financial performance, environmental performance, or operational performance. Future research can expand the content of performance measurement items, such as comparing to financial performance, and identify which types of performance are most impacted by CSR. Furthermore, future research could explore the relationship between CSR and financial performance by value cocreation.

Finally, due to limitations on cross-sectional data, future researchers could conduct similar analyses with longitudinal data in the same area to further determine the causal relationship between variables. Furthermore, since government intervention is crucial to the process of CSR, future researchers may consider policy conditions such as subsidies or regulations as potential moderators between value cocreation and CSR innovation. **Author Contributions:** Conceptualization, R.W. and Y.Y.; methodology, R.W., Y.Y. and S.M.J.; formal analysis, J.Z. and Y.Y.; investigation, J.Z.; data curation, Y.Y.; writing—original draft preparation, R.W. and J.Z.; writing—review and editing, J.Z., Y.Y., S.M.J. and J.Z.Z.; visualization, R.W. and J.Z.; supervision, R.W., Y.Y., S.M.J. and J.Z.Z.; funding acquisition, R.W. All authors have read and agreed to the published version of the manuscript.

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Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

**Data Availability Statement:** The data that support the findings of this study are available from the corresponding author upon reasonable request.

Conflicts of Interest: The authors declare no conflict of interest.

#### Appendix A

Appendix A.1. Supplier Value Cocreation

Please select the appropriate scores to express the degree of value cocreation between your company and your suppliers [1–7: Strongly disagree–Strongly agree].

Measurement Item							
Knowledge sharing							
SKS1	The company encourages suppliers to put forward their own ideas and suggestions on existing products or the development of new products						
SKS2	The company provides suppliers with sufficient product descriptions and information to participate in product development						
SKS3	Suppliers are willing to spend time and energy to share opinions and ideas with the company to help it further improve products and processes						
SKS4	Our company creates an environment and opportunities for suppliers to put forward suggestions and opinions						
Interaction							
SIT1	In this process (referring to the process of product development, marketing, assistance to other departments, the same below), suppliers can put forward their specific requirements						
SIT2	Our company will communicate information related to the process to the supplier						
SIT3	Our company allows suppliers to interact in the brand business process						
SIT4	To yield the most value from this process, the supplier must actively participate in the interaction						
Relationship							
SRP1	Our company makes it more convenient for suppliers to enjoy the process (or product)						
SRP2	Our company's suppliers feel that they have a bond with the company						
SRP3	Our company's suppliers have a like-minded organization or group						
SRP4	Our company's suppliers spread positive reports of the company on social networks						

Appendix A.2. Intracompany Value Cocreation

Please select the appropriate scores to express the degree of intracompany value cocreation [1–7: Strongly disagree–Strongly agree].

Measurement Item		
Knowledge sharing		
IKS1	The company encourages internal departments to put forward their own ideas and suggestions on existing products or the development of new products	
IKS2	The company provides sufficient product descriptions and information to internal departments to participate in product development	
IKS3	Internal departments are willing to spend time and energy to share opinions and ideas with the company to help it further improve products and processes	
IKS4	Our company creates an environment and opportunities for internal departments to put forward suggestions and opinions	
Interaction		
IIT1	In this process (referring to the processes of product development, marketing, assistance to other departments, the same below), various departments within the company can put forward their specific requirements	
IIT2	Our company will communicate information related to the process to internal departments	
IIT3	Our company allows internal departments to interact in the brand business process	
IIT4	To yield the most value from this process, internal departments must actively participate in the interaction	
Relationship		
IRP1	Our company makes it more convenient for internal departments to enjoy the process (or product)	
IRP2	Various departments within our company feel that they have a bond with the company	
IRP3	Our company's suppliers have a like-minded organization or group	
IRP4	Our company's suppliers spread positive reports of the company on social networks	

# Appendix A.3. Customer Value Cocreation

Please select the appropriate scores to express the degree of value cocreation between your company and customers [1–7: Strongly disagree–Strongly agree].

Measurement Item		
Knowledge sharing		
CKS1	The company encourages customers to put forward their own ideas and suggestions on existing products or the development of new products	
CKS2	The company provides customers with sufficient product descriptions and information to participate in product development	
CKS3	Customers are willing to spend time and energy to share opinions and ideas with the company to help it further improve products and processes	
CKS4	Our company creates an environment and opportunities for customers to put forward suggestions and opinions	
Interaction		
CIT1	In this process (referring to the process of product development, marketing, assistance to other departments, the same below), customers can put forward their specific requirements	
CIT2	Our company will communicate information related to the process to customers	
CIT3	Our company allows customers to interact in the brand business process	
CIT4	To yield the most value from this process, customers must actively participate in the interaction	
Relationship		
CRP1	Our company makes it more convenient for customers to enjoy the process (or product)	
CRP2	Our company's customers feel that they have a bond with the company	
CRP3	Our company's customers are a like-minded organization or group	
CRP4	Our company's clients spread positive reports of the company on social networks	

# Appendix A.4. Corporate Social Responsibility (CSR)

Compared with your company's main competitors, please select appropriate scores to evaluate your company's voluntary participation in corporate social responsibility activities (economics, legal ethics, charity) [1–7: Not at all–A very great extent].

Measurement Item		
Economics		
EC1	Our company maintains a high level of operational efficiency	
EC2	Our company continues to be profitable	
EC3	Our company implements supply chain management from purchase to payment	
Legal ethics		
LE1	Our company's employees are law-abiding company citizens	
LE2	Our company fulfills its legal obligations	
LE3	Our company operates in accordance with the expectations of social customs and ethics	
LE4	Our company is committed to high standards of integrity and ethical behaviour	
Charities		
SP1	Our company has policies to support the career development of its employees	
SP2	Our company provides equal opportunities in the workplace, such as promoting women to senior management positions	
SP3	Our company has policies to improve the health and safety of employees within the company and its supply chain	
SP4	Our company makes charitable donations, such as cash donations, product donations, and charity sales donations	
SP5	Our company carries out charitable volunteer services for managers and employees	

# Appendix A.5. Innovation Capacity

Compared with the main competitors, please select the appropriate scores to express your agreement with the capabilities of your company [1–7: Strongly disagree–Strongly agree].

Measurement Item		
Product innovation		
PT1	Our company's product innovation has promoted renewal	
PT2	Our company's product innovation has changed existing products	
PT3	Our company's product innovation has enhanced the customer experience	
PT4	Our company's product innovation has enhanced its existing product expertise	
Organizational innovation		
OE1	Our company implements employee development and employee retention programs	
OE2	Our company maintains an internal functional working group	
OE3	Our company promotes flexible job responsibilities	
OE4	Our company integrates suppliers	
Process innovation		
PS1	Our company creates and manages related technology portfolios	
PS2	Our company has valuable knowledge in innovative manufacturing and technical processes	
PS3	Our company has valuable knowledge in work organization processes and systems	
PS4	Our company allocates resources to the brand department	
Marketing innovation		
MT1	In incorporating customer needs into product marketing, our company does a better job than our competitors	
MT2	Our company's marketing campaign plan is better than that of our competitors	
MT3	Our company's advertising management and creative skills are good	
MT4	Our company's PR skills are better than those of our competitors	

#### Appendix A.6. Economic Performance

Please select appropriate scores to evaluate the degree of improvement of your company's economic performance [1–7: Not at all–A great extent].

Measurement Item		
Economic performance		
EP1	Increase operating income	
EP2	Increase R&D investment	
EP3	Improve product quality	

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