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How Corporate Social Responsibility Influences Business Model Innovation: The Mediating Role of Organizational Legitimacy

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Abstract: Business model (BM) innovation driven by corporate social responsibility (CSR) has attracted considerable attention from scholars. However, the understanding of whether and how CSR influences BM innovation is limited. Therefore, this paper aimed to fill these gaps by exploring the influence of CSR on BM innovation through the mediating role of organizational legitimacy (OL). This paper proposed research hypotheses on the relationships among CSR, OL, and BM innovation and empirically tested these hypotheses by using the hierarchical regression analysis method with data collected from 186 firms. The results of this study show that both CSR and OL positively influence BM innovation. The results also show that CSR positively influences OL and OL mediates the relationship between CSR and BM innovation. This paper provides new insights into the relationship between CSR and BM innovation by answering questions of whether and how CSR influences BM innovation. This paper may help managers better understand how to link CSR and BM innovation.

Keywords: corporate social responsibility; organizational legitimacy; business model; business model innovation

1. Introduction

Since the mid-1990s, with the rapid development of technology (especially Internet technology), the business model (BM) concept has become prevalent [1]. BM is not only an activity system that is designed to help firms create, deliver, and capture value through the exploitation of business opportunities [2], but is also an organizational configuration that is used by firms to differentiate themselves from competitors and create competitive advantages [3]; it is thus an important factor in improving firm performance [4–6].

However, due to the change in environment and imitation of competitors, the initial BM of a firm, no matter how novel and competitive it may be, will become inefficient and outdated [7,8]. Firms thus need to innovate their BMs to meet the challenges of environmental change and competitive imitation. Particularly for successful firms, if they do not keep their BMs adapted to environmental change, they run a great risk of failure [9]. Therefore, BM innovation has become a crucial factor for sustaining firm performance and an important source of sustainable competitive advantage [6,10,11].

Given the beneficial outcomes of BM innovation, researchers have focused on identifying its antecedents [12–14]. Some research has linked organizational internal factors to BM innovation [11]. For example, organizational learning [14,15], dynamic capabilities [16], managerial cognitions [13,17], and corporate entrepreneurship [18] have been shown to lead to BM innovation. Other research has explored the influence of organizational external factors on BM innovation [11]. For example, the demands of stakeholders [19,20], regulatory forces [21], opportunities brought about by new

technologies [18,22], and environmental dynamism and munificence [5] have been shown to function as drivers of BM innovation. While the literature has provided valuable findings, gaps still exist. For example, research on this issue has identified a limited number of antecedents [23], and scholars are still needed to find new antecedents [13]. The reason is that antecedents of BM innovation “may be many, different in nature, and placed at different levels” [11] (p. 217). Gaps also include the limited studies that “systematically theorize the antecedents of BM innovation” [11] (p. 211), and there is a lack of discussion on the process of antecedents influencing BM innovation, resulting in a limited understanding of how to implement BM innovation.

Recent research has begun to emphasize BM innovation driven by corporate social responsibility (CSR). Some studies have found that proactive CSR policies will cause pioneering established companies to innovate their BMs toward social BMs [24–26]. Other studies have demonstrated that CSR activities that respond to greater sustainability, such as facilitating inclusive growth and targeting low-income consumers, can achieve significant BM innovation [27–29]. In conclusion, these studies emphasized that CSR is an antecedent of BM innovation and advocate incorporation of CSR into firms’ BMs [25,28]. However, the situation in practice is as follows “companies have in recent years increased their public rhetoric on CSR, the degree to which they actually implement CSR principles in their on-the-ground operations is questionable” [30] (p. 179). This contradiction between rhetoric and reality is “attributable to the fact that these companies have not fully integrated CSR into their business models” [30] (p. 179). If incorporating CSR into BMs is used as the criterion, there are at least three gaps in the literature.

First, few studies have paid attention to the innovation of purely commercial or for-profit BM when analyzing the role of CSR as an antecedent. The existing literature has focused on the effect of CSR on innovating BMs towards social or sustainable BMs [25,27]. They are primarily oriented toward resolving social and environmental issues and are significantly different from purely commercial or for-profit BMs primarily oriented toward profit generation [26,28]. However, almost all firms are concerned with purely commercial or for-profit BMs rather than social or sustainable BMs, because their main motivations are to make profits [6,31]. Therefore, the existing literature is unable to provide an answer of whether firms are interested in incorporating CSR into their BMs.

Second, there is little understanding of whether CSR influences BM innovation positively due to limited research on the theoretical and empirical link between CSR and BM innovation. Although the existing literature has shown that CSR may lead to BM innovation [24,28], these studies are descriptive and inductive rather than theoretical and confirmatory. In addition, little empirical research has been implemented on the influence of CSR on BM innovation. Therefore, the existing literature is unable to provide an answer regarding whether it is really necessary for firms to incorporate CSR into their BMs.

Third, an understanding of how CSR influences BM innovation is lacking because the examination of the process mechanism underlying the link between CSR and BM innovation has been neglected. The existing literature has mainly discussed the direct influence of CSR on BM innovation [28,32], resulting in managers’ limited understanding of how to innovate their BMs based on CSR. Therefore, the existing literature is unable to provide an answer to the question of how firms incorporate CSR into their BMs.

This paper sought to fill these gaps. First, this paper sought to analyze the role of CSR as an antecedent of the innovation of the purely commercial or for-profit BM. Unlike the existing literature, which focused on the role of CSR as an antecedent of the innovation of the social or sustainable BM, this study focused on the role of CSR as an antecedent of the innovation of the purely commercial or for-profit BM, because most firms’ BMs are primarily oriented toward profit generation. The essence of a purely commercial or for-profit BM (hereafter called BM) is “in defining the manner by which the enterprise delivers value to customers, entices customers to pay for value, and converts those payments to profit” [6] (p. 172), answering “the fundamental questions every manager must ask: How do we make money in this business” [33] (p. 3). Second, this paper sought to check the relationship between CSR and BM innovation. The focuses of this research were elucidation of the effect of CSR on BM innovation and testing it using an empirical research. Third, this paper sought to explore the process

mechanism by which CSR influences BM innovation by examining the mediating role of organizational legitimacy (OL). Scholars argue that an important way for firms to benefit from CSR is by linking CSR to OL [34,35]. OL is a generalized perception or assumption [36], reflects the response and catering of organizational behaviors to institutional logics and social norms [37,38], and helps firms acquire and utilize resources from stakeholders [37,39], which in turn can promote BM innovation. Therefore, this study highlights the importance of studying OL as a potential mediator of the relationship between CSR and BM innovation.

The contents of this paper are organized as follows. Section 2 briefly reviews the relevant literature and derives hypotheses regarding relationships among CSR, OL, and BM innovation. Section 3 describes the research methodology. Section 4 presents the processes and results of the empirical analysis. Section 5 discusses the findings, theoretical contributions, practical implications, limitations, and further research.

2. Literature Review and Hypotheses Development

2.1. BM Innovation

In recent years, the BM has become a key concept for understanding how firms realize their value proposition and generate profits. It has therefore attracted considerable attention among scholars in various fields, such as business strategy [6,40], technological innovation [41,42], entrepreneurship management [3,18], and international business [21,43]. Although a consistent view about the definition of a BM has not yet developed, it is generally argued that the essence of a BM is value creation, delivery, and capture [44,45]. For example, Teece described a BM as “the design or architecture of the value creation, delivery, and capture mechanisms” [6] (p. 172). Shafer et al. defined a BM as “a representation of a firm’s underlying core logic and strategic choices for creating and capturing value within a value network” [46] (p. 202). Osterwalder and Pigneur defined a BM as “the rationale of how an organization creates, delivers, and captures value” [47] (p. 14).

BM innovation is an important topic in BM research [18]. It not only helps firms reach new customers and establish relationships with them to obtain a first-mover advantage, but also helps firms establish dynamic advantages that are difficult for competitors to imitate in a dynamic business environment [48,49]. As a result, an increasing number of scholars are beginning to move away from explaining and conceptualizing BMs to exploring and discussing BM innovation [8]. BM innovation refers to “the search for new logics of the firm and new ways to create and capture value for its stakeholders; it focuses primarily on finding new ways to generate revenues and define value propositions for customers, suppliers, and partners” [48] (p. 464). BM innovation can be an act of adjusting an existing BM, or it can be an act of creating a new BM [23,49,50].

2.2. CSR and BM Innovation

CSR is a major concept in management literature [51,52]. CSR is a firm’s moral and business obligation [53]. Scholars have given a variety of CSR definitions [54–56]. Among them, McWilliams and Siegel’s definition is widely adopted [57,58]. They defined CSR as “actions that appear to further some social good, beyond the interests of the firm and that which is required by law” [55] (p. 117). Carroll proposed that CSR includes corporate economic, legal, ethical, and discretionary initiatives [54]. While Carroll’s framework is widely supported, this paper adopted the stakeholder approach to understand CSR, due to the fact that this approach is useful to understand CSR in almost any context [59]. Applying this approach, scholars have identified several CSR initiatives: customers, employees, shareholders, society, and the environment [60–62].

First, CSR can lead to BM innovation due to its effects on adjusting the existing value proposition and creation. Socially responsible firms will take actions, such as strengthening and expanding the social attributes of products and value activities, to respond to the social concerns of stakeholder groups [55,63], resulting in firms adjusting their existing value proposition and creation. For example,

McWilliams and Siegel showed that firms engage in CSR for customers, not only leading to developing the product with socially responsible attributes, such as pesticide-free ingredients, but also leading to CSR-related processes, such as the use of organic methods [55]. In addition, firms' responses to the social concerns of stakeholder groups will gain reputations for them [34], which in turn help them attract and motivate stakeholders to participate in adjusting their existing value proposition and creation [55]. For example, Kim et al. showed that employees in socially responsible firms are more likely to be happy and proud of being members of the reputable firm, resulting in deep involvement in the organization and voluntary behaviors beyond job requirements [64].

Second, CSR can lead to BM innovation due to its effects on new business opportunities and new business strategies. Human development obstacles such as climate change and resource scarcity have accelerated the decline of traditional industries and promoted the emergence of new industries. Firms engaged in CSR can respond to these obstacles and thus obtain new business opportunities, which will drive them to abandon the old BMs and develop new BMs suitable for the new industrial characteristics [65]. For example, unlike the manufacturing-based BMs of traditional automobile firms, electric automobile firms have built different kinds of leasing-based new BMs to reduce the battery cost to end users [63]. For the other firms, although they are not in the dying industries, they may need to take actions to cope with changes in business strategies caused by stakeholders' new social concerns [65], which will lead to firms abandoning the old BMs and developing new BMs suitable for the new business strategies. For example, as consumers increasingly focus on energy services rather than energy products, some firms in the energy sector have actively changed their business strategies and in turn built new BMs focusing on providing services [66].

Third, CSR can lead to BM innovation due to its effects on CEO risk-taking incentives. The CEO's cognition determines the new value logic and then the new BM [6]. In addition, the implementation of BM innovation is inseparable from the support and leadership of the CEO [67]. In other words, CEO risk-taking attitude and behaviors are crucial to BM innovation. CSR encourages CEO risk-taking because CSR has a positive effect on CEO risk-taking incentives [68]. In their research on CSR and CEO risk-taking initiatives, Dunbar, Li, and Shi showed that firms possessing an insurance-like benefit due to higher CSR standing would have more risk-taking capacity going forward, and therefore respond by offering CEOs compensation contracts with features that encourage risk taking [68]. Therefore, we proposed the first hypothesis as follows.

H1. *CSR has a positive effect on BM innovation.*

2.3. CSR and OL

With stakeholders significantly redefining the role of business in society, OL has become an important issue [38]. Society is increasingly demanding that firms have legitimacy not only in their economic behaviors but also in their social and environmental behaviors [36,38]. OL refers to "a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions" [36] (p. 574). OL is critical to organizational survival [37,38]. By enhancing legitimacy, firms can gain stakeholders' recognition, which can be transformed into survival, growth, and sustainability [35]. On the other hand, those firms with weak legitimacy will encounter risks [38]. The value of legitimacy to an organization is also reflected in its contributions to employee dedication [35], customer decision-making [69], investor behavior [70], technological innovation [39], entrepreneurship [71], supply chain [72], and international mergers and acquisitions [73].

Firms can take actions, such as CSR activities, to acquire, maintain, and enhance legitimacy [36,38,69]. CSR can influence OL for the following reasons. Firstly, the intentions of CSR emphasize that it is a way of gaining OL [74]. Firms engage in CSR in order to enhance the appropriateness of their actions within a set of specific rules, norms, values, and beliefs established by multiple stakeholders [36]. In other words, one of the main intentions of CSR is to pursue public perception or assumption, that is, OL [34]. Secondly, the function of CSR indicates that it can positively influence OL [35]. The consistency

between firm behaviors and stakeholders' expectations is an important prerequisite for OL [38,75]. CSR contains the positive and responsible commitments and behaviors of firms to stakeholders [35]. Therefore, CSR can meet the expectations of stakeholders and in turn establish, maintain, and enhance OL [38]. For example, Zhao showed that in both developed and developing countries, society has a common understanding that firms are members of society and therefore have responsibilities to make positive contributions to better social development [76]. Therefore, firms carrying out CSR activities can gain social recognition, and thus legitimacy. Thirdly, CSR can help firms cope with legitimacy dilemmas [69]. Controversial firms such as alcoholic beverage producers are more likely to face legitimacy dilemmas due to negative impacts of their products on health [77]. CSR may help offset the negative image generated by controversial products [69]. Finally, some empirical studies have shown that CSR helps to enhance OL [35,78]. For example, an empirical study based on 288 firms conducted by Zheng et al. showed that CSR helps to improve external and internal legitimacy [35]. Therefore, we proposed the second hypothesis as follows.

H2. *CSR has a positive effect on OL.*

2.4. OL and BM Innovation

Resource-based view (RBV) helps to understand BM from both static and dynamic perspectives [79]. From a static perspective, the resource, such as physical and intellectual assets, is one of the components of a BM because it is the basis for value creation, delivery, and capture, and in turn, is required to make a BM work [47,80]. From a dynamic perspective, BM innovation can't be implemented without resource acquisition and allocation [3]. For example, Hamel emphasized that firms must acquire resources concomitantly to the implementation of new BMs [81]. Foss and Saebi suggested that successful implementation of BM innovation may require corresponding changes in the organizational design, such as the setting of objectives and the allocation of resources [11].

OL can promote BM innovation due to its effects on resource acquisition and allocation. OL includes external and internal legitimacy [35]. External legitimacy refers to "the degree to which a firm achieves approval of its actions with outsider stakeholders such as customers, partners, and non-government organizations", and internal legitimacy refers to "the extent to which employees perceive the firm's mission and operations as appropriate" [35] (p. 392). As BM innovation increasingly depends on external resources and capabilities, building good relationships with external stakeholders becomes imperative [10,82]. External legitimacy enables firms to obtain trust and reliability from external stakeholders and thus enables firms to build good relationships with them [83]. Accordingly, external legitimacy helps firms acquire external resources, such as financial resources and technology [37,39], and in turn, promotes BM innovation. On the other hand, BM innovation needs firms to reduce employee resistance and improve employee commitment and participation, because employees determine the efficiency of resource allocation and use in BM innovation [9,11]. Internal legitimacy can enhance employee dedication, satisfaction, and cohesion due to the fact that it improves employee trust and recognition [35,84], which can in turn lead to greater efficiency of resource allocation and use in BM innovation.

OL itself is a necessary resource for BM innovation. OL, a social judgment of appropriateness and desirability from stakeholders, is a resource "at least as important as other resources, such as capital, technology, personnel, customer goodwill, and networks" [37] (p. 414), because it is equivalent to the approval, recognition, and acceptance of stakeholders [36,85]. A new BM may encounter legitimacy problems because stakeholders are unfamiliar with it. Stakeholders can't judge whether the attributes of value proposition and creation embodied in this new BM are desirable, proper, or appropriate. As a result, the new BM is difficult to recognize and accept. If the new BM is built by a firm with OL, stakeholders may approve of and accept it [83], because stakeholders are willing to believe that this firm's attributes of value proposition and creation are very likely to be desirable, proper, or appropriate. Therefore, we propose the third hypothesis as follows.

H3. *OL has a positive effect on BM innovation.*

2.5. Mediating Role of OL

Following the clues provided by relationships mentioned above, we explored whether OL can play a mediating role in CSR influencing BM innovation.

First, we predicted that OL can mediate the relationship between CSR and BM innovation based on the clues provided by the relationship between CSR and OL. As shown in Section 2.3, CSR influences OL. Obviously, firms will be concerned with the beneficial outcomes of CSR influencing OL. One of consequences of OL is its resource effects, not only because it is a resource in itself [36,85], but also because it can help firms acquire resources from external stakeholders [37,39]. Accordingly, when firms connect CSR to OL, they can obtain the resource effects of OL, which in turn can be used to adjust their existing BMs as well as create new BMs for them. Therefore, we argued that OL can play a mediating role in the influence of CSR on BM innovation.

Second, we predicted that OL can mediate the relationship between CSR and BM innovation based on the clues provided by the relationship between OL and BM innovation. As shown in Section 2.4, OL influences BM innovation. Firms will be concerned with the drivers of OL influencing BM innovation. One of antecedents of OL is CSR, due to the fact that it contains the positive and responsible commitments and behaviors of firms to stakeholders and in turn meets the expectations of stakeholders [35,36,38]. Accordingly, CSR can become a driver of OL influencing BM innovation, thus indicating that OL can play a mediating role in the influence of CSR on BM innovation. Therefore, we propose the fourth hypothesis as follows.

H4. *OL mediates the relationship between CSR and BM innovation.*

The four hypotheses proposed above constitute the conceptual model linking CSR, OL, and BM innovation (see Figure 1).

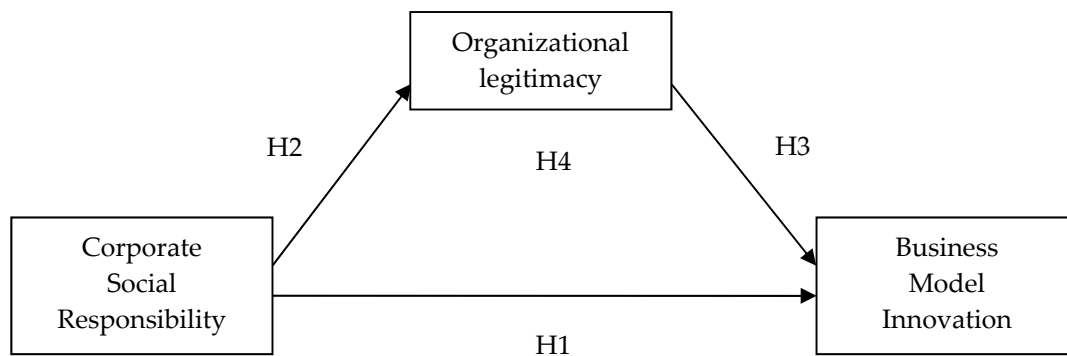


Figure 1. Conceptual model. Note: H4 represents the hypothesis of mediation effect.

3. Research Method

3.1. Sampling and Data Collection

A questionnaire survey is appropriate for collecting data, especially when secondary data are not available [85]. Due to the fact that there is no mature database such as KLD in China, previous studies choosing Chinese firms as the sample have widely used the survey approach to collect the data related to CSR [60,62], OL [86,87], and BM innovation [88,89]. Following these studies, we used questionnaire survey to collect data.

The questionnaire survey was conducted in 2018. We chose firms from Zhejiang province in China as the sample. Zhejiang province is one of the most developed regions in China. The main characteristics of firms in Zhejiang province are of innovativeness and growth orientation, which are in line with the strategic focus of China's economy, and in turn, make these firms representative firms in China. Therefore, firms in Zhejiang province actively engage in CSR and implement BM innovation

for growth. In addition, due the focus on specialization strategies, BM innovation of Zhejiang firms is less complex and thus easier to measure. Following previous studies [4,90], we collected data from different industries (e.g., chemical and pharmaceutical, textile and clothing, Internet and IT, wholesale and retail, and other industries) to construct a representative sample.

We chose participating firms and respondents with the following criteria. Firstly, the firms selected should not be state-owned holding firms. Generally speaking, state-owned holding firms in China show higher level of CSR and OL than what they should show, and show lower level of BM innovation than what they should show. Therefore, the participating firms should not include state-owned holding firms. Secondly, senior managers, such as general managers, marketing managers, and office directors, were chosen as respondents, because these managers possessed enough information and knowledge to evaluate their respective organizations [91], including their CSR, OL, and BM innovation.

Before the questionnaire was issued, we invited three scholars to evaluate the questionnaire and selected five firms for pretesting. This not only helped us to ensure that the items were suitable for Chinese firms but also helped us to confirm that the respondents we had chosen were sufficiently knowledgeable to complete the questionnaire. The feedback mainly concentrated on the measurement for BM innovation and OL. First, the three scholars suggested that items for BM innovation should focus on changes in components of the BM rather than the continuum between exploiting existing BM and exploring new BM argued by Pedersen et al. [92]. This study adopted the suggestion because exploiting existing BM and exploring new BM are two different kinds of behaviors that can be performed simultaneously, rather than two ends of a continuum, according to the perspective of organizational ambidexterity [93]. In addition, there is a low correlation between exploiting existing BM and BM innovation, because exploiting existing BM aims to improve efficiency rather than novelty. Second, five firms suggested that this study should adopt 7-point Likert-type scale rather than the 10-point Likert-type scale argued by Pedersen et al. when measuring BM innovation [92]. They gave the response that the 10-point scale not only increased the difficulty of the respondents' judgment but also was inconsistent with the 7-point scale of other variables in the questionnaire. This study agreed with them and adopted their suggestions. Third, service firms in five firms recommended that supplier-related items should be removed from the scale of OL because they found it difficult to identify their suppliers and then evaluate supplier-related items. We agreed with the recommendation.

We received assistance from the Zhejiang Province Economic and Information Commission, which is the government department in charge of Zhejiang firms. We obtained a list of firms and randomly selected 485 firms from it to conduct a questionnaire survey. We contacted these firms by e-mail or telephone, introduced the study to them and asked whether they would like to participate in the survey. In total, 250 firms agreed to participate in the survey after two reminders. We then sent questionnaires to these firms primarily by mail. After two reminders, 212 firms returned their completed questionnaires. Of these returned questionnaires, 17 were excluded because the respondents did not meet our criteria, four were excluded because they included incomplete data, and five were excluded due to strong data regularity (e.g., the respondent evaluated most items with the same score). In the end, we obtained 186 valid questionnaires. Table 1 summarizes the characteristics of our sample firms. As shown in Table 1, a diverse sample was constructed in terms of firm size, firm age, and industry type.

Table 1. Characteristics of participating firms.

Characteristics	Frequency	Percentage (%)
Sales revenue (RMB million)		
10 or lower	46	24.7
10–300	72	38.7
Over 300	68	36.6
Firm ages (years)		
10 or younger	84	45.2
11–20	49	26.3
Over 20	53	28.5
Industry sector		
Manufacturing	77	41.4
Service	109	58.6
Industry		
Electronics and equipment	25	13.4
Chemical and pharmaceutical	19	10.2
Textile and clothing	18	9.7
Food and beverage	15	8.1
Wholesale and retail	17	9.1
Finance	16	8.6
Internet	46	24.7
Information technology	14	7.5
Logistics and distribution	16	8.6

3.2. Variables and Measures

We chose the items proposed in the previous literature as the measurement items. We used a 7-point Likert-type scale (1 = strongly disagree to 7 = strongly agree) when measuring variables.

3.2.1. BM Innovation

Although scholars have not given clear answers to the question of how to measure BM innovation, they all emphasized measuring BM innovation from the perspective of changes in lower-order components of BM [14,92]. For example, Von Delft et al. developed a BM innovation scale that focused on measuring changes in customer value proposition, profit formula, key resources, and key processes [14]. Spieth et al. measured the BM innovation as value-offering innovation, value architecture innovation, and revenue model innovation [25].

Findings by Osterwalder and Pigneur have been widely approved and accepted among many studies of BM components [47]. They proposed that BM consists of nine components, including customer segments, value propositions, channels, customer relationships, revenue streams, key resources, key activities, key partnerships, and cost structure; they noted that BMs can be described, visualized, assessed, and changed from the perspective of these nine components. Pedersen et al. developed a BM innovation scale based on the nine components of Osterwalder and Pigneur and proved that it performs well [47,92]. Therefore, BM innovation in this study was measured by using the scale of Pedersen et al. [92] (see Table 2).

3.2.2. CSR

CSR comes from the needs of stakeholders such as customers, investors, employees, and society [55]. Although the definitions of CSR are different in the literature, it is generally believed that firms must take actions to meet the expectations of stakeholders [54–56]. Accordingly, scholars argue that CSR should be measured from the perspective of a firm's responses to the general social concerns of stakeholder groups [61,94].

Table 2. Reliability and validity.

Constructs and Items	Loadings
CSR (Cronbach's α = 0.886, CR = 0.897, AVE = 0.594)	
Our company establishes procedures to comply with customer complaints.	0.720
Our company treats its customers honestly.	0.759
Our company offers safety at work to its employees.	0.743
Our company treats its employees fairly (without discrimination or abuses).	0.742
Our company helps solve social problems.	0.809
Our company is concerned with improving the general well-being of society.	0.843
OL (Cronbach's α = 0.884, CR = 0.889, AVE = 0.617)	
Most of the general public would approve of our company if asked their opinion.	0.859
Most consumers in the general public approve of our company's operating practices.	0.804
Our company has one of the lowest rates of employee turnover in the industry.	0.737
Our company follows government regulations for operating procedures in the industry.	0.862
Our company is committed to meeting the industry standards in its production operations.	0.645
BM innovation (Cronbach's α = 0.935, CR = 0.934, AVE = 0.611) (Items complete the sentence "Over the past three years, ...")	
Our company's focus is on developing new products and/or services.	0.765
Our company's focus is on identifying and serving new markets and customer segments.	0.783
Our company's focus is on developing and/or acquiring new resources and competences (technology, people, IT systems, etc.).	0.755
Our company's focus is on developing new core processes and activities (design, logistics, marketing, etc.).	0.835
Our company's focus is on establishing relationships with new strategic business partners (suppliers, distributors, end users, etc.).	0.829
Our company's focus is on developing new tools for building customer relationships (personal service, memberships, bonus systems, etc.).	0.752
Our company's focus is on selling products and/or services through new channels (own stores, partner stores, online, etc.).	0.772
Our company's focus is on making major changes in the combination of costs incurred when operating the company.	0.784
Our company has developed new ways of generating revenue (products, services, leasing, sponsorships, etc.).	0.755

Pérez and Rodríguez del Bosque applied this perspective to develop a CSR image scale to measure customer perception of CSR [59]. In their works, items of measuring CSR were firstly developed through literature review and interviews, and then were modified to items that can be understood and answered by customers. For example, an item "(our company) establishes procedures to comply with customer complaints" adapted from Maignan et al. [95], was firstly developed as one of the items to measure CSR, and then was modified as one of the items to measure CSR image, that is, "I believe that this company establishes procedures to comply with customer complaints".

This paper was concerned with CSR rather than CSR image. Therefore, this paper used CSR items developed by Pérez and Rodríguez del Bosque [59] to measure CSR (see Table 2). In addition, the CSR items developed by them have some advantages. For example, the CSR initiatives in these items have been evaluated by stakeholders (especially customers) as the core initiatives of CSR to meet the expectations of stakeholders; these items can be used not only to measure CSR accurately but also to support design more effective social strategies [59].

3.2.3. OL

It is difficult to observe OL because OL is a generalized perception or assumption [36,71]. Therefore, the previous literature has mostly used the case study method. However, some studies have overcome this methodological challenge, arguing that OL can be inferred indirectly through the actions of internal and external audiences [71,96]. The scale developed by Elsbach not only considers internal

and external endorsement, which is consistent with previous claims of OL measurement, but also considers organizational normativity, which is an attribute that a legitimate organization should have [97]. Therefore, this paper measured OL based on the scale of Elsbach [97] (see Table 2).

3.2.4. Control variables

Firm age and firm size have been widely adopted as control variables in previous studies on BM innovation [88–90]. Following these studies, we chose firm age and firm size as control variables because these variables may influence BM innovation. Based on Lyles and Salk [98], we calculated firm age by subtracting the year of firm establishment from the year of our survey. Based on Song et al. [99], we used sales revenue to measure firm size.

4. Analysis and Results

4.1. Nonresponse Bias and Common Method Bias

To test for nonresponse bias, we examined the differences between respondents and nonrespondents for our sample. T-tests showed no significant differences in terms of sales revenue and firm age. We also used a chi-squared test of dependent variable to compare the early and the late respondents. We defined the first 30 respondents as the early respondents and the last 30 respondents as the late respondents. The result did not reveal any significant differences ($p < 0.05$). To detect common method bias, Harman's single-factor test was conducted [100]. The exploratory factor analysis results for all the variables (i.e., CSR, OL, and BM innovation) show that three distinct factors emerge and explain 67.1% of the total variance. The first factor explains 28.5% of the total variance, which is not the majority of total variance. Accordingly, we concluded that common-method bias is not a serious threat.

4.2. Reliability and Validity

We performed a confirmatory factor analysis (CFA), using AMOS 24.0, to test the factor structure of the items as well as constructs' reliabilities and validities (see Table 2). The model fit indices were as follows: $\chi^2/df = 1.979$, RMSEA = 0.073, GFI = 0.862, AGFI = 0.822, CFI = 0.940, TLI = 0.930, IFI = 0.941, NFI = 0.887. Among these indices, χ^2/df was less than 3, and CFI, TLI, and IFI were higher than 0.9, meeting the criteria of a good model fit [101]; RMSEA was less than 0.08, meeting the criteria of a reasonable model fit [101]; GFI and NFI were less than 0.9 but greater than accepted 0.85 thresholds [102]; AGFI, a little less than 0.85, was still within the acceptable range [102]. Overall, these indices suggested the model was acceptable. Factor loadings of all items were above the threshold value of 0.5 (see Table 2), suggesting these items could be retained. We used Cronbach's α and composite reliability to evaluate reliability. From Table 2, it is clear that all values of Cronbach's α and composite reliability were greater than the desired level of 0.7 [103]. We calculated the average variance extracted (AVE) to assess convergent validity. The results show that all values of AVE were greater than the desired level of 0.5 [104]. To determine discriminant validity, the square root of AVE was used. Table 3 shows that the square roots of the AVE values for each construct were greater than the correlations [104].

Table 3. Descriptive statistics and correlations between variables.

	1	2	3	4	5
1.Firm age	n.a.				
2.Firm size	0.525 ***	n.a.			
3.CSR	0.229 **	0.198 **	0.771		
4.OL	0.110	0.127	0.767 ***	0.785	
5.BM innovation	0.140	0.245 **	0.690 ***	0.663 ***	0.782
Mean	3.330	4.450	5.533	5.202	5.264
SD	2.031	2.051	1.145	1.096	1.120

Note: The numbers on the diagonal show the square root of AVE. * $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$.

4.3. Hypotheses Testing

Hierarchical regression analysis method has been widely used to test hypotheses in previous studies on BMs [4,5,89,90,105]. Thus, this paper tested the hypotheses using this method. According to Baron and Kenny's methodology [106], the hypothesis testing in this paper included the following processes.

First, we examined the influence of CSR on BM innovation. Model 1 was built to examine the influence of control variables (firm age and size) on BM innovation. Based on model 1, model 2 was built to verify H1. As shown in Table 4, CSR had a significant and positive influence on BM innovation ($\beta = 0.681, p < 0.001$), which indicates that H1 is supported.

Table 4. Regression results.

	Dependent Variables					
	BM Innovation		OL		BM Innovation	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Firm age	0.015	−0.102	0.060	−0.074	−0.024	−0.078
Firm size	0.238 **	0.164 **	0.095	0.011	0.176 **	0.161 **
CSR		0.681 ***		0.781 ***		0.428 ***
OL					0.643 ***	0.323 ***
F	5.886 **	59.568 ***	1.752	88.064 ***	53.034 ***	52.694 ***
R ²	0.060	0.495	0.019	0.592	0.466	0.538
Adjusted R ²	0.050	0.487	0.008	0.585	0.458	0.528
ΔR^2	0.060	0.435	0.019	0.573	0.406	0.043

Note: * $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$.

Second, we examined the influence of CSR on OL. Model 3 was built to examine the influence of control variables on OL. Model 4 was built based on model 3 to verify H2. As presented in Table 4, CSR significantly and positively influenced OL ($\beta = 0.781, p < 0.001$), indicating that H2 is supported.

Third, we examined the influence of OL on BM innovation. Based on model 1, we built model 5 to check whether H3 is valid. As shown in Table 4, OL had a significant and positive influence on BM innovation ($\beta = 0.643, p < 0.001$). Thus, H3 is supported.

The above results show that CSR (the independent variable) had a positive influence on BM innovation (the dependent variable), CSR (the independent variable) had a positive influence on OL (the mediating variable), and OL (the mediating variable) had a positive influence on BM innovation (the dependent variable). Therefore, we built model 6 as shown in Table 4 to test whether the mediating effect of OL exists [106]. Comparing model 2 with model 6, we found that the standardized coefficient corresponding to CSR remained significant but fell from 0.681 (model 2) to 0.428 (model 6). This suggests that CSR not only directly influenced BM innovation but also indirectly influenced BM innovation through OL. That is, OL partially mediated the relationship between CSR and BM innovation. Therefore, H4 is supported.

5. Discussion and conclusions

This paper aimed to explore the influence of CSR on BM innovation through the mediating role of OL. Accordingly, this paper proposed some research hypotheses and used the hierarchical regression analysis method to empirically test them. This paper mainly achieved the following findings. First, our results show that CSR had a positive effect on BM innovation. This finding indicates that CSR is one of the antecedents of BM innovation. Considering that BM innovation is a form of innovation, this finding is consistent with findings of previous studies, which showed that CSR promotes innovation [55,61,65]. Thus, firms can use CSR activities to advance their BM innovation. Second, our results show that CSR had a positive effect on OL. This finding is in line with findings of previous studies that showed CSR helps to enhance OL [35,55,78]. According to this finding, firms can use CSR activities to enhance their OL [35,39]. Third, our results show that OL had a positive effect on BM innovation. Considering that OL is a resource as important as other resources [39], this finding is consistent with findings of previous studies on BM innovation based on RBV [3]. This finding demonstrates that OL is one of the antecedents of BM innovation, which suggests that firms can link OL to BM innovation. Fourth, our results show that OL partially mediated the relationship between CSR and BM innovation. This finding indicates that CSR not only has a direct influence on BM innovation but also has an indirect influence on BM innovation through the mediating role of OL. Accordingly, firms can make use of both direct and indirect effects of CSR on BM innovation.

5.1. Theoretical Contributions

This study makes several theoretical contributions. First, the study illustrates the effect of CSR on purely commercial or for-profit BM innovation. In contrast with previous research that has focused on the influence of CSR on social or sustainable BM innovation [24,27], this study extended to focus on the influence of CSR on purely commercial or for-profit BM innovation. The results show that CSR has a positive effect on purely commercial or for-profit BM innovation.

Second, the study provides a large sample-based empirical evidence for the influence of CSR on BM innovation. The existing research has claimed that CSR has a positive effect on BM innovation, but there is no empirical evidence. This paper conducted a large sample-based empirical study and verifies the influence of CSR on BM innovation.

Third, the study promotes the understanding of the indirect relationship between CSR and BM innovation. The study explored how CSR influences BM innovation by examining the mediating role of OL. The results show that CSR can influence BM innovation through the mediating role of OL, indicating that there is an indirect relationship between CSR and BM innovation.

Fourth, the study adds to the literature exploring the antecedents of BM innovation. In this study, we focused on examining relationships between CSR, OL, and BM innovation. Our results suggest that both CSR and OL can influence BM innovation, demonstrating that they are antecedents of BM innovation. In addition, we explored the relationship between CSR and OL, and the mediating role of OL in the influence of CSR on BM innovation, providing a process mechanism of BM innovation showing that CSR can influence BM innovation through OL.

5.2. Managerial Implications

This study provides some practical implications for managers as well. First, firms can play the role of CSR in BM innovation and further improve their financial performance. Firms are cautious or even skeptical about CSR investment due to the debate over the relationship between CSR and financial performance. The findings of this paper provide an effective way for CSR investment to improve financial performance. Considering the positive effect of BM innovation on financial performance, firms should link CSR investment to BM innovation and in turn improve their financial performance. Specifically, firms can increase the social attributes of their products or services and value creation systems to improve their existing BMs, or implement CSR-based business strategies to build completely

new BMs. Second, firms can gain competitive advantage brought about by BM innovation by linking CSR to OL. Firms can increase CSR investment and engage in CSR activities to establish, maintain, and enhance legitimacy, and then give full play to the role of legitimacy in acquiring and allocating organizational external resources. Accordingly, firms can integrate their external and internal resources, which help to increase their resource base and heterogeneity, thus providing the possibility of realizing heterogeneous BM innovation at lower cost, and finally providing opportunities for firms to gain competitive advantage through BMI innovation.

5.3. Limitations and Future Research

This study has several limitations that should be addressed in future research. First, it did not explore the contingency factors of CSR influencing BM innovation through OL. Future research can introduce some moderator variables into the research model, such as environmental dynamics and resource integration capabilities, to examine the impact of these variables on the relationship among CSR, OL, and BM innovation. Second, this study did not explore internal factors through which CSR could influence BM innovation. CSR enables some internal factors of the organization, such as CEO risk-taking incentives [68]. Future research can introduce these internal factors as mediating variables to increase the understanding of how CSR influences BM innovation. Third, this study used questionnaire survey to collect data. Although this approach has been adopted by many scholars especially in the BM field, it may also lead to measurement bias. Future research can address this limitation by using different data collection approaches (e.g., obtaining objective data from third parties). Fourth, problems of endogeneity were not discussed in this study. Following empirical studies based on survey in the field of CSR [53,57] and BM [4,5], this study did not take into account the endogenous problem in regression analysis. Future research should explore endogeneity to reduce the impact of endogeneity [107,108].

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