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Citation for published version:

Li, JC, Benamraoui, A, Shah, N & Mathew, S 2021, 'Dynamic Capability and Strategic Corporate Social Responsibility Adoption: Evidence from China', *Sustainability*, vol. 13, no. 10, 5333.
<https://doi.org/10.3390/su13105333>

Digital Object Identifier (DOI):

[10.3390/su13105333](https://doi.org/10.3390/su13105333)

Link:

[Link to publication record in Heriot-Watt Research Portal](#)

Document Version:

Publisher's PDF, also known as Version of record

Published In:

Sustainability

Publisher Rights Statement:

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Article

Dynamic Capability and Strategic Corporate Social Responsibility Adoption: Evidence from China

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Abstract: An increasing number of studies have proposed that corporate social responsibility (CSR) performance depends on how firms apply their resources and capabilities to implement CSR. A firm's ability to integrate, build, and reconfigure internal and external competencies to respond to environmental changes is its dynamic capability. Implementation of CSR at the strategic level, i.e., strategic CSR (SCSR) that requires alignment between activities and organizational configuration and structure will contribute to a firm's sustainability. However, the research on how dynamic capabilities contribute to such alignment and SCSR adoption is incipient. This study investigates how dynamic capability influences the performance of SCSR in China. By analyzing 134 Chinese listed firms in the period 2017–2019, in this study, we found that firms with dynamic capabilities at a non-average-industrial level, i.e., higher or lower level than the average industrial level, were less likely to adopt SCSR practices, and had a low SCSR adoption performance. These results can help firms better understand dynamic capabilities and how dynamic capabilities contribute to SCSR adoption and firms' sustainable development and operations. The policy implications of the study are also discussed.

Keywords: dynamic capability; strategic corporate social responsibility adoption; corporate social responsibility (CSR); sustainable development; China



Citation: Li, J.C.; Benamraoui, A.; Shah, N.; Mathew, S. Dynamic Capability and Strategic Corporate Social Responsibility Adoption: Evidence from China. *Sustainability* **2021**, *13*, 5333. <https://doi.org/10.3390/su13105333>

Academic Editor: Andrea Appolloni

Received: 1 April 2021
Accepted: 10 May 2021
Published: 11 May 2021

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1. Introduction

Firms have a responsibility to react and respond dynamically to changes in the economy, environment, and society. To respond to these changes, a firm requires aligning the design of its activities with every aspect of its organizational structure, including processes, metrics, and incentives, through effective organizational resource reconfigurations [1]. Such alignment contributes to sustainable operation and development at the firm level by “doing well by doing good”; in other words, firms can profit and benefit society at the same time [2]. To achieve this win-win situation, firms use corporate social responsibility (CSR) practices as a tool and tend to perform this CSR with a strategic concern, i.e., adopt strategic CSR (SCSR) [3].

These dynamic capabilities (DCs) allow firms to use and allocate resources appropriately. The dynamic capability theory (DCT) [4] states that firms need DCs to develop a sustained competitive advantage since DCs create intangible and valuable assets, such as knowledge that is scarce and difficult to imitate. Therefore, DCs are core to enhancing business processes and exploiting more possibilities, forming better business strategy [5]. Without strong DCs, resources and good strategy and competitive advantage are likely unsustainable [5].

However, since each organization choice constrains what a firm can and cannot do, pursuing DCs cannot produce a firm capable of doing everything simultaneously. Therefore, DCs have inherent limitations in aligning all activities with every aspect of organizational design, such as structure, processes, metrics, and incentives [1]. Nonetheless,

firms differ in the level of DCs and the extent of alignment of activities and organizational designs [1]. Firms with a higher level of DCs, for instance, are more capable of sensing and identifying new markets, resources and opportunities, but these firms often face more pressures than those with a lower level of DCs when making choices and tradeoffs [1]. This is because firms with a higher level of DCs have to meet stricter and higher extent of alignment in every aspect of organizational design and activities than firms with a lower level of DCs [1]. Therefore, firms with a higher level of DCs could be difficult to adopt SCSR since adopting SCSR requires highly consistent organizational design and activities [3]. Therefore, this current study differentiates firms with a high or low level of DCs and examines the relationship between levels of DCs and SCSR adoption.

Extant literature suggests that DCs contributes to the adoption of SCSR [6,7]. For example, Essid and Berland used case studies of eight large French firms to analyze the DCs of adopting environmental management tools [7]. They found that DCs could be operationalized to adopt environmental management tools by internal and external antecedents. For instance, accumulated knowledge is an internal antecedent to reconfiguring capabilities since accumulated knowledge helps firms absorb and quickly develop new knowledge. Lin et al. also reached similar results in a Chinese context [8]. They surveyed 264 Chinese firms to investigate the influence of DCs on the innovation process stages. They found a positive relationship between DCs and the innovation process stages, from initiation to implementation. For example, absorptive capability positively affected the whole innovation process because the absorptive capacity may enable a firm to begin management innovation by taking in new information efficiently and acquiring and assimilating knowledge. Consequently, knowledge transformation can help the firm to integrate innovations with firm resources [8].

China is a unique case for CSR adoption research since China suffers from various severe CSR issues, such as air pollution and bribery [9]. Extant Chinese firms lack a recognition of the importance of incorporating CSR practices in strategy [9]. This paper hopes to demonstrate that DCs are important for firms to achieve their CSR goals, using a sample of listed firms from two Chinese stock exchanges from 2017 to 2019.

According to the stakeholder theory, firms should act toward stakeholders' interests, including shareholders, employees, customers, suppliers, the government, and the community [10]. Firms should perform CSR activities to satisfy stakeholders' interests due to the resulting benefits of CSR activities, such as showing a good firm image to the stakeholders for more investments and more stable stakeholder relationships [11]. Therefore, firms must consider CSR issues and concerns when doing business and incorporate CSR concerns and practices into their operational strategies (i.e., adopt SCSR practices). Although these concepts had been previously studied separately or combined, there was a lack of in-depth analysis of the relationship between DCs and SCSR. Therefore, there was a gap in how DCs function on SCSR adoption and performance. This study examines how firms' DCs are related to their CSR performance based on their strategic business goals. In this paper, we argue that DCs are an important factor of SCSR adoption.

This study has several significant contributions to knowledge in the field of CSR and corporate governance. This study contributes to the empirical literature of CSR in the context of China. Extant Chinese firms lack recognition of the importance of CSR adoption at the strategic level, although the government encourages firms to adopt SCSR [9]. Similar to the case of green travel, although the government has stipulated policies to encourage residents in green travel, non-green travel actions are still popular [12]. In this study, we conduct research to raise firms' attention to DCs and SCSR in that firms may need to design resource allocation strategies and evaluate their future CSR and management practices in an early stage. This study empirically constructs DC measures and proves that DCs are an essential factor of SCSR adoption and performance. The research extends the CSR literature by suggesting that researchers consider DCs in CSR research. Additionally, this study finds the negative and significant relationship between DCs and SCSR adoption,

which provides empirical evidence for DCT. This study offers important insights into practical implications.

The study objective is to explore how DCs can contribute to the adoption of CSR at the strategic level in China. The article is structured in different sections. Section 2 discusses the CSR and DCs literature and presents the theoretical framework; in Section 3, we include the study's data collection process and research methodology. In Section 4, we show the baseline regression results and robustness test results. The last section, the Conclusion, includes implications for managers, limitations, and future research.

2. Literature Review and Hypotheses Development

2.1. CSR in China

There has been an increase in CSR research interest in developing countries over the years [13] due to three main reasons [14]. First, developing countries have more than 80% of the total world population and dominate almost 50% of the world's GDP, forming a large market in the global view. Such a market with great potential provides many investment opportunities, resulting in the fast growth of developing countries. Second, developing countries have generally low/medium income and human development, resulting in widespread CSR-related issues and crises in developing countries due to globalization and fast economic growth. Third, CSR practices are in an infant stage in developing countries, and so there is a need to call for more research into CSR issues [15–18].

The adoption of CSR is influenced by China's economic environment and institutional pressures within the institutional environment [19]. First, there has been a significant change in China's economic environment from a state-controlled economy to a socialist market [13]. During the transition, firms tended to maximize profit to respond to intense competition. Therefore, firms focused on financial performance instead of CSR behaviors [13]. Second, there has been a significant change in China's institutional environment [13]. On the one hand, the Chinese government promoted CSR practices to gain social legitimacy [11]. For example, Wenzhou city in Zhejiang province created China's first CSR evaluation system for private firms [20].

On the other hand, Chinese firms are learning CSR initiatives and implementations. In particular, in China, managers and business leaders with a sense of CSR integrate CSR initiatives into daily operations to obtain a potential competitive advantage [21]. Therefore, researchers must explore CSR initiatives in China's context because China has a large market with under-developed CSR systems [13,22].

2.2. Strategic Corporate Social Responsibility

The literature on CSR has stressed the lack of consensus in defining CSR [23,24]. CSR's conceptual vagueness, the inherently normative feature of the CSR literature, and the halt in the literature's development by the continuous introduction of new concepts related to CSR has led to a lack of CSR concepts [25].

Traditionally, a firm's social responsibilities should include economic responsibility that maximizes the shareholders' wealth and has legal, ethical, and discretionary responsibilities [26]. However, developing countries, such as China, have different rankings and priorities of CSR components [24]. Visser proposed a new ranking pyramid for developing countries [18]. Specifically, with economic responsibility first and philanthropic responsibility second, followed by legal and ethical responsibilities. The ranking is different from Carroll's pyramid since CSR is commonly related to charity or philanthropy in developing countries [18].

This conclusion is further supported in China's context by two possible explanations [13]. One reason is that the institutional environment in transitional China leads to imperfect market and legal systems. Hence, "stockholder interest" and "legal compliance" are rarely considered in Chinese CSR by Chinese firms, although they exist. Hence, many problems, such as the lack of procedural protection of legitimate rights, result in weak legal enforcement and civic accountability [27,28]. Another explanation lies in the influence of

ethical leadership. The most typical cultural tradition in China is the Confucian culture, which is concerned with Ren and Li, meaning benevolence, philanthropy, humaneness, and social rules and norms [13]. Confucian culture has been abided by many Chinese business leaders and is a substitute for ethics [29].

Chandler defines CSR as the responsibility of firms to satisfy stakeholders' interests and stakeholders' responsibility to hold firms accountable for their actions [30]. Consistent with CSR definitions reviewed by other scholars [23,24], CSR's scope includes the relationship between firms and society. Inherently, CSR covers the responsibilities of both firms and stakeholders over time and at different levels. In sum, this study is consistent with the prior literature [13,18] in that corporate social responsibilities include ethical, legal, philanthropic, and economic responsibilities.

Lantos [31] classified CSR into three types by purpose and nature: moral CSR, altruistic CSR, and SCSR. Moral CSR is carried out due to moral norms. In contrast, the firms carry out altruistic CSR since they want to be good citizens and benefit society without concern for their financial returns [31]. By comparison, SCSR is carried out since the firms want to gain a sustainable competitive advantage for either moral purpose, i.e., no harm or to compensate for harm done to society, or charitable purpose, i.e., contributing to society actively to meet social expectations [32]. Vishwanathan et al. [33] further defined SCSR as an implementation tool to ensure that the firm's CSR activities and business operations are aligned and generate social good and financial value [6,34,35].

Through a review of CSR research, we have found three main characteristics of SCSR. First, SCSR concerns the interests of stakeholders [36]. Since firms' operating activities and stakeholders' interests affect interactively, it is important to consider the needs of stakeholders when operating firms. Therefore, carrying out SCSR is an interactive process since firms need to think about the social responsibility activities to benefit and satisfy stakeholders at a strategic level [36,37].

Second, SCSR stresses the coexistence of business and social benefits [33,34,38]. Since SCSR incorporates social objectives into business and links social and economic goals in the long term [3], firms need to perform a cost-benefit analysis before deciding to carry out a CSR initiative [39]. The motivation of SCSR is to benefit society and the firm simultaneously, improving the social and firm value and achieving a win-win situation [3,34]. Therefore, firms conduct SCSR to achieve strategic objectives and social objectives for long-term economic benefits [31].

Third, firms integrate SCSR into their core operating activities [40–42]. Since SCSR lays a foundation for creating and maintaining a sustainable competitive advantage, SCSR creates a shared value for society and the firms [34]. This is important for firms carrying out SCSR since combining CSR with business process contributes to a firm's internal value chain activities and improves their external competitiveness [43,44].

2.3. Dynamic Capability

DCs are considered as an important factor affecting firms undertaking SCSR [4], where the DCs refer to the higher-level capabilities associated with other resources and capabilities to achieve fitness with the environment [5]. DCs consist of sensing, seizing, and transforming capabilities. Sensing activities incorporate external information into the internal organizational system, which helps managers identify possible firm problems and new opportunities [5]. The seizing capabilities focus on the responsiveness of the firm system to external opportunities and threats. Transforming capabilities attempt to align the firm system components with each other and with strategies [5]. In sum, these three components of DCs indicate the extent of the firms' behaviors in the value creation and obtainment processes.

Barney [45] proposes that valuable, rare, imperfectly imitable, and non-substitutable (VRIN) firm resources have the potential to generate a durable competitive advantage. Teece defined DCs as a firm's abilities to integrate, build, and reconfigure internal and external competencies to create a long-term competitive advantage [4]. Unlike VRIN

resources, DCs create intangible and valuable assets, such as knowledge that is scarce and difficult to imitate [4]. DCs are core to enhancing business processes and exploiting more possibilities, forming better business strategy [5]. Without strong DCs, VRIN resources and good strategy and competitive advantage are likely unsustainable [5]. Evidence has shown that the Chinese manufacturing industry, with an increasing green growth efficiency value, has huge promotion potentials in saving resources and reducing environmental pollution [46]. Hence, DCs can indicate the internal competency for creating and obtaining the respondents' sustainable competitive advantage. Therefore, DCs are vital for creating and maintaining a sustainable competitive advantage in the market.

Drawing back to the definition of DCs [4], the creation of sustained competitive advantage is the ultimate goal and outcome of possessing DCs. Following Zhu et al. and Hill and Jones [47,48], we constructed a sustained competitive advantage index as a proxy of DCs. Sustained competitive advantage is a firm's ability to surpass its competitors in the fields of management, production, research and development, technology, branding, and marketing in long-term market competition [47]. Different firms exhibit different competitive situations; unilaterally measuring the competitive situation is too general and cannot fully reflect a firm's competitive situation.

In this study, we took two steps to construct the sustained competitive advantage index. First, considering that the competitive situation is a market outcome, we calculated the sustained competitive advantage by measuring the operating performance, development capability, and market position [47]. The operating performance indicator can be expressed as the excess of the firm's return on equity (ROE), indicating a firm's competitive power. According to Hill and Jones [48], a firm has a strong competitive advantage if it has a continuously higher operating performance than its competitors. The excess of ROE can reflect the firm's stronger financial status than its competitors in the same industry. The development capability indicator reflects the firm's growth, expressed by the growth rate of a firm's operating income. The market position indicator reflects the product's acceptance in the market, expressed by its market capitalization in the industry [48].

Second, after calculating the three indicators for three consecutive years, we used the principal component analysis method to obtain the annual sustained competitive advantage index for each sample firm [47]. Sample firms were classified into three groups by comparing the annual sustained competitive advantage index to the mean of the related industry; these were sustainable competitive advantage firms (higher dynamic capability, HDC), general firms (common dynamic capability, CDC), and firms lacking competitive advantages (lower dynamic capability, LDC) [47]. Specifically, HDC refers to those firms with a competitive situation index higher than the mean of the same industry for three consecutive years, indicating a high level of dynamic capability on average. LDC refers to those firms with a competitive situation index lower than the mean of the same industry for three consecutive years, indicating a lower level of dynamic capability on average. The remaining sample firms were classified as CDC, with an average industrial level of dynamic capability. The dynamic capability (DC) variable takes the values of 1 for HDC, -1 for LDC, and 0 for CDC.

2.4. Dynamic Capability and SCSR Adoption

DCs play an important role in strategic managerial accounting and SCSR practices and performance [49]. Understanding DCs and their impacts could provide more information for managers when deciding whether to adopt CSR into strategies and the possible performance [7]. However, there is a lack of empirical evidence to contribute to DCs on SCSR adoption and performance, possibly due to measurement difficulties [50]. This current study examines the relationship between DCs and SCSR adoption. The DCT and the stakeholder theory were used to analyze the adoption of SCSR behaviors and performance results [51].

The DCT states that firms need DCs, such as public resources, specified resources, organizational and management capability, and innovative capability, to develop a sustained

competitive advantage [4,49]. Specifically, firms purchase public resources to produce goods and acquire knowledge. Specified resources are strategic resources, such as business secrets and patents. Firms require organizational and management capabilities to obtain specified resources. Innovative capability is acquired and integrated by firms to adapt to changing environments. These DCs are employed by firms to integrate resources when working on strategic innovation and are applicable to new initiatives that involve resource reconfiguration [6]. Therefore, DCs are crucial firm resources for competency in business strategies and long-term development [4]. Possessing more resources and better capabilities improves resource allocation efficiency and results in a long-term competitive advantage [49].

DCs involve the manager capability and competency, which are necessary to make resource allocation decisions, such as whether and to what extent to incorporate CSR practices into strategies [49]. DCs have numerous benefits and play an essential role in adopting management practices [49]. For example, firms with strong DCs can utilize firm resources effectively. Managers may make more effective resource allocation decisions related to financial and non-financial projects [49]. Drawing on these DCs benefits, managers may improve their DCs and incorporate CSR practices into business operations. Possessing strong DCs can have other benefits that motivate firms to adopt SCSR [3]. For example, having a high level of DCs could help identify unmet social and stakeholders' needs [52] and help attract future opportunities for management decisions [34]. Managers may revise operational strategies accordingly. Therefore, firms with strong DCs may prefer to incorporate CSR strategies to align with both firms and society and perform better in financial and non-financial aspects.

DCs provide a sustainable competitive advantage that helps firms survive in the long term [53]. Such a competitive advantage is one reason that drives firms to develop and implement SCSR practices [54]. Therefore, the higher the level of DCs, the more likely it is to adopt SCSR and have higher SCSR performance. The possible reason is that firms may want to create and obtain a sustained competitive advantage over time.

In addition to the perspective of DCs, this study is based on the stakeholder perspective to explain the positive impact of DCs on SCSR adoption and performance. The stakeholder perspective is based on the stakeholder theory, which is widely used in CSR literature [51,55].

The stakeholder theory states that firms should act toward stakeholders' interests, including shareholders, employees, customers, suppliers, the government, and the community [10]. In other words, firms should consider stakeholder interests, although firm ownership belongs to the shareholders. The reason is that stakeholders invest in firm resources as well. For example, firms obtain human resources and productive forces at the expense of employees' work [37]. According to the stakeholder theory, to make employees satisfied, firms could perform CSR activities [10]. An example is incorporating CSR engagements into operations (i.e., SCSR adoption) [3]. For instance, firms could improve the salary and working conditions to satisfy employees, which could improve productivity due to the same business objective as the firm.

Possessing a higher level of DCs could enrich firm resources and capabilities. Firms could have more resources to invest in CSR projects and incorporate CSR in business strategies, satisfying stakeholders' interests. The reason is that when aligning the interests of both firms and stakeholders, firms may build up DCs. Hence, firms may use the available resources and DCs to create a long-term competitive advantage and improve financial performance to meet more stakeholder needs [4].

According to a combination of the perspective of DCs and the stakeholder perspective, we propose the following hypothesis.

Hypothesis 1. *The group of firms with a high level of DCs is more likely to adopt SCSR practices and have better SCSR.*

3. Data and Research Methodology

3.1. Sample and Data

To explore the impact of DCs on the adoption of SCSR, we tested our hypothesis using data collected from Chinese listed firms in the Shenzhen and Shanghai stock exchanges. The sample period covered 2017 to 2019 since the period had a complete available dataset. The measurement data on dynamic capability were calculated using the annual sustained competitive advantage index for three consecutive years and collected from the Worldscope database. The period of the data on DCs covered 2015 and 2016 as well. Data on the state-owned enterprise ownership and CSR strategy score were collected from the Environmental, Social and Governance (ESG) Asset4 database. Data on the firm age, leverage and firm size were collected from the Worldscope database. Data on the industry categories were obtained from the Worldscope database as well. The databases can be accessible from Thomson Reuters Datastream and are commonly used by recent researchers [56,57].

After the deletion of missing and incomplete data, the final dataset included 134 listed Chinese firms (see Table 1). Table 1 describes the firms' industry distribution based on the Industry Classification Benchmark (shown in Thomson Reuters Datastream). Most firms were in healthcare, consumer services, and the basic materials sectors, with the distributions of 30.6%, 29.9%, and 20.9%, respectively. We used IBM SPSS 25 software for the data analysis.

Table 1. Industry distribution of firms.

Industry	Firms	Percentage
Basic materials	28	20.90
Industrials (Construction and materials)	14	10.40
Consumer goods (Food and Beverage)	6	4.50
Healthcare	41	30.60
Consumer services	40	29.90
Telecommunications	5	3.70
Total	134	100

Source: Industry Classification Benchmark (Thomson Reuters, Datastream).

3.2. Estimation Models

To examine the impacts of dynamic capability on SCSR, in this study, we built a multilinear regression model (see Equation (1)). We used the ordinary least squares (OLS) estimation method to test the hypothesis. We used the level of SCSR at year t as the dependent variable. Firms were classified into three groups—firms with high, low, and common levels of DCs.

$$\text{SCSR} = \alpha + \beta_1 \times \text{DC} + \beta_2 \times \text{SIZE} + \beta_3 \times \text{AGE} + \beta_4 \times \text{LEV} + \beta_5 \times \text{SOE} + \text{IND} + \text{YEAR} \quad (1)$$

In Equation (1), SCSR represents the firm's extent of incorporating CSR into its strategy. DC is a variable representing DCs, which can have the values of 1, 0, and -1 . This variable takes the value of 1 for sustainable competitive advantage firms with a competitive situation index higher than the mean of the same industry for three consecutive years. It takes the value of -1 for firms lacking a competitive advantage with a competitive situation index lower than the mean of the same industry for three consecutive years. It takes the value of 0 for the remaining sample firms, which are the general firms.

The annual sustained competitive advantage index for each firm consists of three indicators (i.e., the excess ROE, operating income growth rate, and market capitalization) by using the principal component analysis method. If the coefficient on the dynamic capability is significantly positive (i.e., $\beta_1 > 0$) when DC takes the value of 1, this supports that firms with a higher level of DCs are more likely to adopt SCSR and have better SCSR performance. If the coefficient on the DCs is significantly negative (i.e., $\beta_1 < 0$) when DC takes the value of -1 , this supports that firms with a lower level of DCs are more likely to

adopt SCSR. If the coefficient on the DCs is significantly negative (i.e., $\beta_1 < 0$) when DC takes the value of 1, this supports that firms with a higher level of DCs are less likely to adopt SCSR.

SIZE is the firm size, measured by the natural log of the total assets. AGE is the firm age, measured by the natural log of the number of years since incorporation. LEV and SOE are control variables of the leverage and firm ownership nature, respectively, indicating whether a firm is state-owned or not. LEV is a measure of the debt divided by equity. SOE is a dummy variable of the firm ownership nature, with a value of 1 if a firm is a state-owned enterprise and 0 if otherwise. IND and YEAR are industry and year dummies, respectively. The details of the variables are discussed in the next section and displayed in Table 2.

Table 2. Definition of the variables.

Variable Denotations	Variable Meaning	Formula	Source
SCSR	SCSR Adoption	CSR strategy score	ESG Asset4
DC	Dynamic capability	<p>This variable takes the value of 1 for sustainable competitive advantage firms (higher dynamic capability, HDC) with a competitive situation index higher than the mean of the same industry for three consecutive years. It takes the value of -1 (lower dynamic capability, LDC) for firms lacking competitive advantages with a competitive situation index lower than the mean of the same industry for three consecutive years. It takes the value of 0 for the remaining sample firms, which are general firms (common dynamic capability, CDC).</p> <p>The annual sustained competitive advantage index for each firm consists of three indicators (i.e., the excess ROE, operating income growth rate, and market capitalization) by using the principal component analysis method.</p>	Worldscope
SIZE	Firm size	Natural log of the total assets	Worldscope
AGE	Firm age	Natural log of the number of years since incorporation	Worldscope
LEV	Leverage	Debt/Equity	Worldscope
SOE	A dummy of firm ownership nature	Value of 1 if the firm is a state-owned enterprise, 0 if otherwise	ESG Asset4
IND	Industry dummy	Industry classification benchmark	Worldscope
YEAR	Year dummy	The years of 2017–2019	Worldscope

Certain studies considered DCs and SCSR within the firm characteristics, raising concerns regarding the endogeneity issue due to a bidirectional causality between dynamic capability and SCSR adoption, leading to a bias in the estimation [58]; in this study, we developed Equations (2) and (3) based on Nelling and Webb's [59] and Qiu et al.'s [60] application of Granger causality. The primary justification for using Granger causality models is that the inclusion of lagged independent variables could clearly show the increase in the explanatory power on the current dependent variable [61]. If independent variables could be helpful in the prediction of the dependent variable, then it can be said that the independent variable "Granger causes" the dependent variable [62]. Since the high level

of DCs, HDC_t is a dummy variable taking the value of 1 if the firm has a higher level of DCs than the average industry level and 0 if otherwise, we used a probit regression model to estimate Equation (2). A probit model was also used for firms with a low level of dynamic capability and with a common level. We used the OLS regression model to estimate Equation (3).

$$DC_t = \alpha + \beta_1 \times DC_{t-1} + \beta_2 \times SCSR_t + \beta_3 \times SCSR_{t-1} + \beta_4 \times SIZE_t + \beta_5 \times AGE_t + \beta_6 \times LEV_t + \beta_7 \times SOE_t + IND + YEAR + \varepsilon_t \quad (2)$$

$$SCSR_t = \alpha + \beta_1 \times SCSR_{t-1} + \beta_2 \times DC_t + \beta_3 \times DC_{t-1} + \beta_4 \times SIZE_t + \beta_5 \times AGE_t + \beta_6 \times LEV_t + \beta_7 \times SOE_t + IND + YEAR + \varepsilon_t \quad (3)$$

In Equation (2), DC_t is a function of the lagged DC_t s, current $SCSR_t$, and lagged $SCSR_t$, while in Equation (3), $SCSR_t$ is a function of the lagged $SCSR_t$ and current and lagged dynamic capability level. If the coefficients β_2 and β_3 were significant in Equation (2), we concluded that the $SCSR_t$ adoption "Granger caused" dynamic capability. Similarly, if the coefficients β_2 and β_3 in Equation (3) were significant, then we concluded that dynamic capability "Granger caused" the $SCSR_t$ adoption.

3.3. Measurement of Variables

3.3.1. SCSR

$SCSR_t$ adoption is the dependent variable. We consider using a quantitative method to measure the $SCSR_t$ adoption and performance. The adoption of $SCSR_t$ reflects corporate sustainability, creating and sustaining the long-term firm value [63]. Corporate sustainability embraces the triple bottom line dimensions (economic, environmental, and social) by identifying the needs for changes in current and unsustainable firm practices [64]. Among these dimensions, the main categories of key performance indicators (KPIs) on the environmental dimension include emissions, consumption of natural resources, renewable resources, and eco-efficiency [63]. Categories of KPIs on the economic and social dimensions are in financial aspects and societal community, respectively [63]. Therefore, the choice of indicators of measuring $SCSR_t$ adoption should reflect performance in terms of the triple bottom line dimensions.

In 2020, Thomson Reuters Datastream developed an indicator of CSR Strategy Score, ranging from 0 to 100, in the ESG Asset4 database. The CSR Strategy Score reflects a firm's $SCSR_t$ practices and performance when the firm integrates the economic (financial), social, and environmental dimensions into its day-to-day decision-making processes (referred to as the indicator definition in Datastream). Therefore, this indicator could be used to measure the $SCSR_t$ adoption and performance since the definition is highly consistent with the meaning of $SCSR_t$ [59] and comprehensively embraces the triple bottom line dimensions of corporate sustainability [63].

Therefore, we used this new indicator of CSR Strategy Score to measure the $SCSR_t$ adoption and performance. We expect that the higher the CSR Strategy Score, the more likely it adopts $SCSR_t$ and incorporates CSR practices into the strategy.

3.3.2. DC

DC_t is the primary independent variable, indicating the internal competency for creating and obtaining the respondents' sustainable competitive advantage. Teece defined DC_t s as a firm's abilities to integrate, build, and reconfigure internal and external competencies to create a long-term competitive advantage [11,60,65]. Drawing on the definition of DC_t s [60], the creation of sustained competitive advantage is the ultimate goal and outcome of possessing DC_t s. Hence, in this study, we constructed a sustained competitive advantage index as a proxy variable to measure DC_t s.

In this study, we took two steps to construct the sustained competitive advantage index. First, we calculated the sustained competitive advantage by measuring operating performance, development capability, and market position [5]. The operating performance indicator can be expressed as the excess of the firm's ROE, indicating a firm's competitive power; the development capability indicator reflects the firm's growth, expressed by

the growth rate of a firm's operating income; and the market position indicator reflects the product's acceptance in the market, expressed by its market capitalization in the industry [47].

Second, after calculating the three indicators for three consecutive years, we used the principal component analysis method to obtain the annual sustained competitive advantage index for each sample firm [5]. Sample firms were classified into three groups by comparing the annual sustained competitive advantage index to the related industry's mean; these were sustainable competitive advantage firms, general firms, and firms lacking competitive advantages [5]. Specifically, sustainable competitive advantage firms refer to those firms with a competitive situation index higher than the mean of the same industry for three consecutive years, indicating a high level of DCs over average. Firms lacking competitive advantages refer to those firms with a competitive situation index lower than the mean of the same industry for three consecutive years, indicating a lower level of DCs over average. The remaining sample firms were classified as general firms, with an average industrial level of DCs.

3.3.3. Control Variables

The study includes the following control variables to exclude other potential factor impacts on the final results. First, the study control, firm size, measured by the natural logarithm of total assets [60]. Firm size controls the firm level's potential scale effect in impacting business strategies and CSR practices [61,62]. We obtained the data from the Worldscope database in Thomson Reuters Datastream. Firm size represents the firm resource capacity and the firm's ability to cope with competition and funding opportunities [60,61,66]. The large firms could possess abundant resources and more substantial infrastructure to implement SCSR practices compared to small firms [60,61]. Therefore, firm size can be an essential factor in SCSR adoption. Large firms are more willing to adopt green practices than small enterprises. By contrast, small firms lack this advantage and may have difficulty adopting CSR practices [62]. Therefore, we expected that larger firms are more likely to adopt SCSR because they possess a more substantial resource base and abilities to respond to complex business environments.

Second, according to the previous literature, firm age is considered a factor that affects corporate CSR behavior [61,62]. We measured firm age by the natural logarithm of the number of years since incorporation.

Third, leverage indicates a firm's indebtedness [8,62,67], measured by the total debt divided by the total equity. Based on the literature [68], we expected that a firm with lower leverage might have more financial assets to incorporate CSR practices into strategies and adopt SCSR.

Fourth, firm ownership takes the value of 1 if it is a state-owned enterprise and 0 if otherwise. We expected that if the SOE takes the value of 1, the firm may be more likely to adopt SCSR due to two reasons of corporate-level and macro-level management [3,59,61].

Regarding the reason for corporate-level management, state-owned enterprises may put more firm resources into CSR projects due to the asset-heavy attributes of the capital-intensive industries [8]. Asset-heavy means that unit assets' contribution to sales revenue is relatively low, inevitably reducing the total asset turnover rate and financial performance of the state-owned enterprises. Due to historical reasons, state-owned enterprises have a higher proportion of non-operating assets. Hence, state-owned enterprises have a low total asset turnover rate and low financial performance.

Regarding the macro-level management, China introduced large-scale economic stimulus plans to maintain steady and rapid economic growth since the 2008 financial crisis. The state-owned enterprises have undertaken many new and continued large projects. This macro-level management has led to the slowdown in the structural adjustment and has deepened reform within the state-owned enterprises, leading to the low financial performance of the state-owned enterprises.

For these two reasons, to receive attention and attract investments, the state-owned enterprises may be more likely to incorporate CSR into their operational strategies and adopt SCSR.

In this study, we controlled for industry and year effects and introduced industry and year dummy variables. We classified industries based on the Industry Classification Benchmark in the Worldscope of Thomson Reuters Datastream. The dominated industries of sample firms in this study were basic materials, industrials (construction and materials), consumer goods (food and beverage), healthcare, consumer services, and telecommunications.

4. Results and Discussions

Table 3 presents the descriptive statistics for the continuous variables in the regression analysis. The number of valid observations was 134. As seen from Table 3, the lowest value of SCSR was 0, the highest was 99.32, and the average was 30.66. This suggests a great difference in the level of SCSR between firms. According to Al-Hadi et al. and Zhou et al. [69,70], if the mean and median are similar, this indicates the distribution's normality. Since the mean is close to the median (28.62), this study obtained a normal distribution of data. As for the firm size measured by the natural log of the total assets, the minimum value was 14.97, the maximum value was 21.14, and the average was 17.36. This result indicates a range of firms included in the research sample.

Table 3. Descriptive statistics—continuous variables.

Variables	Number	Mean	Median	Std. Deviation	Minimum	Maximum
SCSR	134	30.66	28.62	28.61	0	99.32
SIZE	134	17.36	17.19	1.24	14.97	21.14
AGE	134	2.52	2.56	0.58	0.98	3.29
LEV	134	0.80	0.47	0.99	0	7.07

Note: There were 134 sampled Chinese listed firms for the period of 2017–2019. SCSR, strategic CSR, is the extent to incorporate CSR practices in operational strategies, measured by CSR strategy scores collected from the Environmental, Social and Governance (ESG) Asset4 database. SIZE is the firm size, measured by the natural log of the total assets obtained from the Worldscope database. AGE is the firm age, measured by the natural log of the number of years since incorporation. LEV is the leverage, which is the firm's indebtedness and measured by the total debt divided by the total equity in percentage form.

Regarding firm age measured by the natural log of the number of years since incorporation, the minimum was 0.98 and the maximum was 3.29. The leverage variable controls for the level of indebtedness of a firm, measured by the total debt divided by the total equity, where the minimum was 0 and the maximum was 7.07 with a mean of 0.80 and a median of 0.47. The result suggests a variation in the level of indebtedness between sample firms. Each control variable's values show a variation between sample firms, indicating that these variables are required to be controlled.

As seen from the correlation analysis using the Spearman correlation method, in Table 4 below, the first column shows the correlation coefficients between independent variables and the dependent variable. Correlations measure the strength and direction of the linear relationship between the two variables. We checked the multicollinearity for correlation coefficients and found that most correlation coefficients among variables significantly correlated at the 1%, 5%, or 10% significance levels. The correlation coefficients between independent variables and control variables were not greater than the threshold of 0.8. The greatest correlation coefficient was 0.713 between the firm size and leverage, at the 1% significance level and less than 0.8 as well. Therefore, there were no significant multicollinearity problems among the variables.

The correlation coefficient between a high level of DCs and SCSR was 0.147, at the 10% significance level. The positive correlation indicates that a firm with a sustainable competitive advantage and a high level of DCs within the industry was more likely to adopt SCSR and have better SCSR performance. The correlation coefficient between low DCs and SCSR was -0.253 , significant at the 1% level, showing a negative correlation.

The correlation coefficient between common DCs and SCSR was 0.075, showing a positive correlation, although the correlation was not significant.

Table 4. Correlation matrix (Spearman).

	SCSR	HDC	LDC	CDC	SIZE	AGE	LEV	SOE
SCSR	1							
HDC	0.147 *	1						
LDC	−0.253 ***	−0.121	1					
CDC	0.075	−0.676 ***	−0.650 ***	1				
SIZE	0.357 ***	0.352 ***	−0.127	−0.175 **	1			
AGE	0.046	−0.066	0.058	0.008	0.341 ***	1		
LEV	0.301 ***	0.082	−0.075	−0.007	0.713 ***	0.313 ***	1	
SOE	0.113	−0.116	0.053	0.05	0.058	0.295 ***	0.172 **	1

Note: *** indicates 1% significance level; ** indicates 5% significance level; and * indicates 10% significance level. There were 134 sampled Chinese listed firms for the period of 2017–2019. SCSR, strategic CSR, is the firm's incorporation of CSR practices in operational strategies measured by the CSR strategy scores. HDC is a dummy variable of sustainable competitive advantage firms with a high level of dynamic capability within the firm's industry. LDC is a dummy variable of firms lacking competitive advantages with a low level of dynamic capability. CDC is a dummy variable of remaining general firms with common dynamic capability. SIZE is firm size, measured by the natural log of the total assets. AGE is the firm age, measured by the natural log of the number of years since incorporation. LEV is the leverage, which is the firm's indebtedness and measured by the total debt divided by the total equity. SOE is the firm ownership nature that takes the value of 1 if the final owner is a state-owned enterprise and 0 if otherwise.

We further checked the variance inflation factors' (VIFs) value of independent variables and tolerance values. All VIF values were less than the threshold of 5, and the maximum VIF was 2.503. All tolerance values were greater than the threshold of 0.1. The results show that there was no multicollinearity issue between the independent variables [71]. The Durbin–Watson test statistic was 2.10, which approximates 2, meaning no autocorrelation issue in the residuals. Therefore, the regression model in this study was relatively effective.

We further examined these correlation relationships using regression analysis as follows.

4.1. Multivariate Analysis

4.1.1. Results of Baseline Regression

To test for the hypothesis (see Section 2) and regression model (in Section 3), we performed OLS regression for the baseline Equation (1). We classified sample firms into three groups according to their DCs level, i.e., firms with high, low, and common average levels in DCs. The regression analysis results of the impact on SCSR based on the level of DCs are shown in Table 5.

As seen from Table 5, a high level of DCs was negatively related to SCSR adoption and performance, although the relationship was not significant ($\beta_2 < 0, p > 0.1$). This result indicates that firms with a high level of DCs were less likely to adopt SCSR practices, and they had a low SCSR adoption performance. This finding does not support Hypothesis 1, that firms with a high level of DCs were more likely to adopt SCSR practices and better SCSR performance.

One possible explanation of the unexpected finding could be due to the loss aversion of firms. People could make decisions (e.g., investments) with decreasing sensibility and loss aversion, where loss aversion refers to making decisions that avoid losses [72]. The maximization of profits, in the long run, is the ultimate goal of firms. Managers may allocate firm resources to invest in projects with net gains since managers attempt to reduce potential loss and increase possible gains to improve profits. Therefore, manager attitudes towards loss and conservatism could affect the role of DCs in adopting SCSR. Diminishing returns could lead CSR investment costs to increase quickly [66,73]. Managers in a firm with a high level of DCs could be loss averse and more conservative. Firms could prefer financial projects with high returns rather than incorporate CSR into strategies, as the adoption of SCSR could involve more costs and low returns [66,73]. Therefore, as people

make decisions with decreasing sensibility and loss aversion, firms with a high DCs level could be less likely to adopt SCSR.

Table 5. Regression results—baseline model.

Variables	Expected Sign	HDC as the Independent Variable	LDC as the Independent Variable	CDC as the Independent Variable
Constant		−242.68 *** (−5.01)	−204.86 *** (−4.95)	−246.78 *** (−5.67)
HDC	+	−8.77 (−0.99)	−	−
LDC	−	−	−10.91 * (−1.50)	−
CDC	+	−	−	10.50 * (1.84)
SIZE	+	16.89 *** (5.44)	14.33 *** (5.67)	16.55 *** (6.37)
AGE	+	−8.31 * (−1.83)	−6.53 * (−1.48)	−7.83 * (−1.79)
LEV	−	−0.04 (−1.13)	−0.03 (−0.89)	−0.05 (−1.36)
SOE	+	12.27 (1.38)	13.02 (1.47)	13.12 (1.49)
IND		Yes	Yes	Yes
YEAR		Yes	Yes	Yes
F-statistic		4.00 ***	4.12 ***	4.23 ***
Adj R-squared		0.26	0.27	0.28

Notes: *** and * indicate significance at the levels of 1% and 10%, respectively. Robust t-statistics are in brackets. There were 134 sampled Chinese listed firms for the period of 2017–2019. SCSR is the firm's extent to incorporate CSR practices in operational strategies measured by CSR strategy scores. HDC is a dummy variable of sustainable competitive advantage firms with a high level of dynamic capability within the firm's industry. LDC is a dummy variable of firms lacking competitive advantages with a low level of dynamic capability. CDC is a dummy variable of the remaining general firms with common dynamic capability. SIZE is the firm size, measured by the natural log of the total assets. AGE is the firm age, measured by the natural log of the number of years since incorporation. LEV is the leverage, which is the firm's indebtedness and measured by the total debt divided by the total equity. SOE is the firm ownership nature, which takes the value of 1 if the final owner is state-owned enterprises, and 0 if otherwise. Industry dummies (IND) and year dummies (YEAR) are included. The + sign indicates an expected positive relationship between the two variables. The − sign indicates an expected negative relationship between two variables.

Another plausible explanation of the surprising finding could be due to the inherent difficulty of DCs. Pursuing a high level of DCs requires a firm to align all activities with every aspect of organization design, such as structure, processes, metrics, incentives [1]. Since each organization choice constrains what a firm can and cannot do, pursuing DCs cannot produce an organization capable of doing everything simultaneously. Therefore, a high level of DCs requires a reconfiguration of activity choices for firms. However, there is a limit to the extent to which a high level of DCs can be employed [1]. In particular, the conflict between the administrative structures required to sustain the current abilities, such as policy deployment review, and those which would change the entire process, limit any firm's ability to pursue a high level of DCs. This inherent limitation of DCs makes firms difficult to align activities with organizational structure [1]. In the context of CSR, the SCSR adoption requires firms to align CSR activities with business strategies and structure, while a higher level of DCs could reduce the extent of such alignment, resulting in less SCSR adoption. Hence, this inherent limitation of DCs could be one plausible reason for the negative relationship between the high DCs level and SCSR.

The low level of DCs was negatively and significantly related to SCSR adoption and performance ($\beta_2 < 0, p < 0.1$), indicating that compared to firms with a common or high level of DCs, the group of firms with a low level of DCs were less likely to adopt SCSR practices, and they had a low SCSR adoption performance.

We also found that the common DCs were positively and significantly related to SCSR adoption and performance ($\beta_2 < 0, p > 0.1$), indicating that firms with an average industrial

level DCs preferred to adopt and incorporate CSR practices into strategies and had a high CSR performance. Our findings may help firms understand better managers' capability and competency in making resource allocation decisions, such as whether and to what extent to incorporate CSR practices into strategies [49].

Regarding the control variables, Table 5 shows that the firm size positively and significantly affected SCSR adoption and performance ($\beta_2 > 0, p < 0.01$), indicating that a large firm size increased a firm's SCSR initiatives. Firm age negatively and significantly impacted SCSR adoption and performance ($\beta_2 < 0, p < 0.1$), indicating that the older a firm's age, the less likely were firms to adopt SCSR. Leverage was negatively and significantly related to SCSR adoption and performance ($\beta_2 < 0, p > 0.1$), indicating that firms with lower leverage were more likely to adopt SCSR. A state-owned enterprise was more likely to adopt SCSR ($\beta_2 > 0, p > 0.1$). The control variables' results were consistent with our expectations and previous literature [48,50,54,56,58–60]. Therefore, it is valid for this study to include these variables as controls.

4.1.2. Endogeneity

To check the possible endogeneity issue due to reverse causality between DCs and SCSR, the results of Equations (2) and (3) are displayed in Table 6. In the results of Equation (2), the coefficients of the current and lagged SCSR are not significant ($p > 0.1$), meaning that the SCSR adoption did not "Granger cause" DCs, whatever the level of DCs. In other words, the SCSR adoption cannot help predict DCs. However, the coefficients of the current DCs were significant when the firm had low or common DCs ($p < 0.1$). The coefficient of lagged DCs was significant at the 0.01 level when the firm had a high DCs level. These results show that DCs "Granger caused" the SCSR adoption, meaning that DCs can help predict the adoption of SCSR. The inclusion of lagged DCs clearly showed the increase in the explanatory power on the current SCSR. The results showed no reverse causality issues between DCs and SCSR, supporting our previous analysis.

Table 6. Endogeneity test results.

Variables	Model Equation (2): DC as the Dependent Variable			Model Equation (3): SCSR as the Dependent Variable		
	HDC Firms	LDC Firms	CDC Firms	HDC Firms	LDC Firms	CDC Firms
DC _t	-	-	-	-13.35	-5.55 *	10.82 *
				(-1.35)	(-0.68)	(1.73)
DC _{t-1}	63.12	2.27 ***	1.89 ***	27.37 ***	-5.69	-7.41
		(3.01)	(3.39)	(3.06)	(-0.69)	(-1.23)
SCSR _t	0.29	-0.029	0.03	-	-	-
		(-0.60)	(1.13)			
SCSR _{t-1}	-0.56	0.023	-0.01	0.77 ***	0.72 ***	0.74 ***
		(0.49)	(-0.48)	(8.99)	(7.82)	(7.90)
SIZE	64.22	-0.148	-1.12 ***	1.72	4.02	6.82 **
		(-0.27)	(-2.81)	(0.39)	(1.32)	(2.02)
AGE	-23.17	0.45	-0.08	-3.92	-9.59 *	-9.81 *
		(0.55)	(-0.14)	(-0.66)	(-1.7)	(-1.71)
LEV	-0.49	-0.009	0.01 ***	-0.03	-0.08 **	-0.09 **
		(-0.93)	(2.45)	(-0.61)	(-1.94)	(-2.10)
SOE	0	1.73	-1.54 *	7.57	20.67 *	20.93 *
		(1.48)	(-1.86)	(0.7)	(1.83)	(1.84)
Constant	-6196	1040.38	401.42	-15.47	-32.18	-82.09
		(0.67)	(0.35)	(-0.24)	(-0.67)	(-1.51)
IND	1.67	-0.006	0.014	Yes	Yes	Yes
		(-0.27)	(0.87)			
YR	29.63	-0.52	-0.19	Yes	Yes	Yes
		(-0.67)	(-0.33)			
Pseudo R ² or Adjusted R ²	0.98	0.54	0.49	0.75	0.72	0.72
LR chi2 or F value	49.38	27.60	36.51	11.94 ***	10.01 ***	10.24 ***

Note: ***, **, * indicate significance at the levels of 1%, 5%, and 10%, respectively. Robust t-statistics are in brackets. Model Equation (2): $DC_t = \alpha + \beta_1 \times DC_{t-1} + \beta_2 \times SCSR_t + \beta_3 \times SCSR_{t-1} + \beta_4 \times SIZE_t + \beta_5 \times AGE_t + \beta_6 \times LEV_t + \beta_7 \times SOE_t + IND + YEAR + \varepsilon_t$. Model Equation (3): $SCSR_t = \alpha + \beta_1 \times SCSR_{t-1} + \beta_2 \times DC_t + \beta_3 \times DC_{t-1} + \beta_4 \times SIZE_t + \beta_5 \times AGE_t + \beta_6 \times LEV_t + \beta_7 \times SOE_t + IND + YEAR + \varepsilon_t$.

4.1.3. Robustness Test

To improve the results' reliability, following Zhou et al. [70], we used SCSR rank as the dependent variable in a robustness check. Table 7 displays the regression results for robustness tests. We obtained similar results and findings compared to the results of the baseline regression in Table 5. The results show that our findings and conclusions were robust.

Table 7. Robustness test results—SCSR rank as the dependent variable.

Variables	Expected Sign	HDC as the Independent Variable	LDC as the Independent Variable	CDC as the Independent Variable
Constant		−121.29 *** (−4.89)	−107.29 *** (−5.10)	−128.82 *** (−5.79)
HDC	+	−2.32 (−0.51)	-	-
LDC	-	-	−6.52 ** (−1.77)	-
CDC	+	-	-	5.04 * (1.73)
SIZE	+	8.71 *** (5.48)	7.79 *** (6.07)	8.94 *** (6.74)
AGE	+	−4.99 ** (−2.15)	−4.28 ** (−1.91)	−4.99 ** (−2.23)
LEV	-	−0.02 (−0.86)	−0.01 (−0.83)	−0.02 (−1.25)
SOE	+	5.53 (1.22)	6.02 (1.34)	5.97 (1.33)
IND		Yes	Yes	Yes
YEAR		Yes	Yes	Yes
F-statistic		3.95 ***	4.23 ***	4.22 ***
Adj R-squared		0.26	0.28	0.28

Notes: ***, **, * indicate significance at the levels of 1%, 5%, and 10%, respectively. Robust t-statistics in the brackets. There were 134 sampled Chinese listed firms for the period of 2017–2019. SCSR is the firm's extent to incorporate CSR practices in operational strategies measured by the ranking of CSR strategy scores. HDC is a dummy variable of sustainable competitive advantage firms with a high level of dynamic capability within the firm's industry. LDC is a dummy variable of firms lacking competitive advantages with a low level of dynamic capability. CDC is a dummy variable of remaining general firms with common dynamic capability. SIZE is the firm size, measured by the natural log of the total assets. AGE is the firm age, measured by the natural log of the number of years since incorporation. LEV is the leverage, which is the firm's indebtedness and measured by the total debt divided by the total equity. SOE is the firm ownership nature that takes the value of 1 if the final owner is state-owned enterprises and 0 if otherwise. Industry dummies (IND) and year dummies (YEAR) are included. The + sign indicates an expected positive relationship between the two variables. The−sign indicates an expected negative relationship between two variables.

5. Conclusions and Future Research

For China's sustainable development, it is important to understand further the role of internal DCs in incorporating CSR into strategies at the firm level. The purpose of the current study was to examine the relationship between DCs on the adoption and performance of SCSR in China. We argued that DCs are an essential factor in SCSR adoption. However, DCs negatively affect the SCSR adoption and performance, possibly due to the loss aversion of firms and the inherent limitation of DCs.

We found that firms with a high or low level of DCs (i.e., higher or lower than the average industrial level in the long run) were less likely to adopt SCSR practices, and they had a low SCSR adoption performance. However, firms with common DCs (i.e., equal to the average industrial level) were more likely to incorporate CSR practices into strategies and had high SCSR performance.

The findings of this current study confirm the importance of DCs on CSR and corporate governance. DCT suggests that firms with a high DCs level could satisfy more stakeholders' interests and needs by obtaining and creating a sustained competitive advantage with their rich firm resources and competencies [53,74]. Therefore, it is easier for firms to adopt SCSR.

However, this current study supports DCT only when firms have an industrial level of DCs. When firms possess DCs higher or lower than the average industrial level, DCT is not supportive in this study.

This current study concluded differently compared to the literature [6]. For example, Ramachandran [6] analyzed one Indian firm identified two kinds of DCs (sense and respond capability and execution capability) as the necessary determinants for successful SCSR. The author proposed that these capabilities can be operationalized in terms of two associated processes, the response design process and the impact assessment process. The response design process indicates the phases of identifying the problem and developing alternatives. The impact assessment process refers to the alternative evaluation and selection phase [6]. The author indicated that the two processes are the reasons for DCs impacting the SCSR positively.

Unlike Ramachandran [6], this current study obtained a negative relationship between the non-industrial level of DCs and SCSR adoption. There are two possible explanations. One is because managers make decisions with decreasing sensibility and loss aversion [72]. Another possible explanation could be the inherent limitation of DCs that require aligning all firm activities with every aspect of organizational design [1]. SCSR is an important organizational design that requires alignment between CSR activities and business strategies. However, this inherent limitation of DCs could be one reason to make a firm challenging to adopt SCSR.

In terms of improving the economic and business environment, governments should take concrete initiatives to promote SCSR adoption, for instance, by involving businesses in nationwide or provincial campaigns of targeted CSR issues such as poverty alleviation. The government initiated CSR activities could encourage firms to engage in CSR activities proactively and incorporate CSR in their business strategies, such as setting up e-platforms to improve sales of goods in poor areas of China. Governments can also consider matching business needs and improving DCs by aligning CSR activities with organizational configurations by setting up unions or platforms for information sharing among firms. A possible government funding can be set up to encourage firms to adopt SCSR. The government can also stipulate relevant policies, such as tax relief, to encourage these firms to adopt CSR with a strategic concern.

In terms of improving a sustainable operating environment at the firm level, firms can align key performance indicators of managers or business objectives with CSR goals and activities. The finance and operations departments should evaluate the achievement of SCSR adoption frequently and adjust resource allocation in time. The management should better understand manager attitudes toward risks and losses in making resource allocation decisions, such as whether and to what extent to incorporate CSR practices into strategies.

The limitations of this study provide insight for future research. First, the study did not include a large sample size. Future research could enlarge the sample size. Second, future studies could assess the long-term impacts of DCs on CSR adoption and performance by extending the sample period. Future studies could focus on cross-national comparisons. Third, the study sample consisted of listed firms; therefore, the results may not apply to small or medium enterprises (SMEs) [75]. Since SMEs are different from publicly listed firms in terms of business models, future research can focus on SMEs to conclude more findings. Additionally, future research could look at any boundary conditions for DCs to impact SCSR. Furthermore, researchers can further perform qualitative studies to explore the process of the loss aversion mechanism.

Author Contributions: Conceptualization, J.C.L.; data curation, J.C.L.; formal analysis, J.C.L.; methodology, J.C.L.; supervision, A.B., N.S. and S.M.; writing—original draft, J.C.L.; writing—review and editing, J.C.L. and S.M. J.C.L. is the lead author. The supervisory team members are the remaining authors and contributors who are involved in the review. This article is part of Claire's Ph.D. thesis. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The data can be freely accessible through Thomson Reuters Datastream Database.

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

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