

CSR and Firm Performance: The role of management innovation through marketing intensity.

Abstract

This study explores the relationship between corporate social responsibility (CSR) and firm performance by analysing data from 716 Chinese firms listed in the Hexun database from 2013 to 2019. In addition, it examines the role of management innovation, particularly through marketing intensity, in influencing the CSR-financial performance relationship. The results demonstrate that CSR has a positive and significant impact on firms' financial performance. Further, the study shows that higher marketing intensity amplifies the financial gains firms achieve from their CSR activities. This study enhances our understanding of the CSR-performance link, suggesting that firms can boost their financial performance through increased marketing efforts alongside CSR initiatives.

KEYWORDS: CSR, management innovation, firm performance, marketing intensity

1 | INTRODUCTION

A firm's commitment to sustainable business practices, is increasingly becoming an important consideration for society (Carroll, 2021). Corporate Social Responsibility (CSR) initiatives encompass a range of sustainability practices, which include environmental protection, social equity, and economic development. The association between CSR and firm performance has garnered significant research attention (Arevalo & Aravind, 2017; Khan et al., 2023; Miller et al., 2020). However, there is a lack of consensus on the association between CSR and firm performance in the extant literature. Several studies demonstrate that CSR has a positive effect on various aspects of firm performance, including financial outcomes, brand reputation, customer loyalty, amongst others (Brammer & Pavelin, 2006; Doh & Guay, 2006; Jeong et al., 2018; McWilliams & Siegel, 2001; Porter & Kramer, 2006). On the other hand, negative, or inconsequential associations are also widely reported (Brammer & Millington, 2008; Huang, 2021; Mahoney & Roberts, 2007; Rupley et al., 2012). These mixed results are a cause of academic tension. To address this academic tension, we introduce the following research question: To what extent does marketing intensity moderate the relationship between CSR and firm performance? Evidence that marketing intensity adds explanatory power to explain the association between CSR and firm performance, contributes to practice by providing insights to management regarding how sustainable practices can be enacted to enhance profitability.

We have several motivations to conduct this study. First, to achieve growth in the modern business environment, there is an expectation that management simultaneously consider financial targets, as well as implement sustainable development strategies (Boons et al., 2013; Cillo et al., 2019; Ketata et al., 2015). Sustainable innovation is defined as an innovation that integrates environmental protection into business strategy, to satisfy the expectations of stakeholders (Delmas & Pekovic, 2018; Larson, 2000). Sustainable innovation is a long-established concept (Schumpeter, 1934), and is shown to have a positive effect on business outcomes

(McCarthy et al., 2014; Peerallyet al., 2022; Rattalino, F. (2018). However, as Adams *et al.* (2023) explain, further research is required to underscore how a firm's decision to implement sustainable innovations can influence firms performance. Based on this assertion, using theories such as stakeholder, signalling, legitimacy, and resource dependence, we are motivated to introduce marketing intensity, as business practice, with the potential to validate a firm's commitment to sustainable and innovative CSR practices. Marketing intensity refers to marketing efforts to enhance a firm's relationship with customers (Kurt & Hulland, 2013; Mizik, 2010). To the best of our knowledge, evidence that firms with high CSR scores, adopt marketing (intensity) as a strategy to promote social innovation, to positively influence firm performance, is a phenomenon not previously captured in the extant literature. Thus, our findings have the potential to contribute to knowledge by extending several literatures.

Second, measurement errors and methodological concerns are referenced as reasons the association between CSR-firm performance is not well-established (Aguinis & Glavas, 2012; Cheng et al., 2014; Servaes & Tamayo, 2013). The literature therefore suggests that an important intervening variable may be omitted from the CSR-firm performance nexus. Marketing intensity is shown to have a positive effect on firm performance (Jaisinghani et al., 2020; Markovitch et al., 2020). However, the moderating effect of marketing intensity on the CSR-firm performance relationship, to the best of our knowledge, remains underexplored. For a sustainable firm with high CSR scores, we make the assertion that marketing plays a vital role in legitimising business activities. More specifically, as a firm with high CSR activities intensifies the marketing of its sustainable business strategy, products and services, it increases its visibility among stakeholders, including current and prospective customers (Servaes & Tamayo, 2013). Thus, to extend the CSR-firm performance literature, we are motivated to discover whether marketing intensity can moderate the relationship between CSR and firm performance. In an instance where marketing intensity enhances firm performance in instances of high CSR, it can provide insights to management about it

is necessary how firms operate in terms of sustainable information that affect firm performance, but how such business practices are marketed.

Third, Jaiswal and Zane (2022) argue that sustainable innovation concepts are not well-understood in emerging economies. Gërguri-Rashiti *et al.* (2017) contend that cultural, market and institutional factors have an intervening effect on social innovation, inferring that studies that use a sample from an emerging economy can provide new insights. In this study, a Chinese sample is selected. The Chinese sample is selected because China is the world's largest emerging economy (World Bank, 2024). China is recognised as being the world's largest CO₂ emitter (Yu et al., 2020). However, China has recently invested in green initiatives such as the 'Green Wall', amongst others, to pivot towards a more sustainable economy (Li et al., 2019). Thus, given the importance of China to the world's economy, and the introduction of policies to promote sustainable business, the Chinese context can be considered an important comparative analysis benchmark. Furthermore, we are motivated to speak to the effect that the implementation of legislation in China, can have on the decision-making process of Chinese market participants. The results therefore contribute to policy debates.

Fourth, it is increasingly being recognised that sustainable business practices are congruent with the expectations of society (Deegan, 2009). However, because the association between CSR and firm performance is not established, there is the potential that management may forego investing in sustainable business practices to meet short-term financial goals. By providing evidence that a strategy to promote business sustainability, via marketing intensity, has the potential to impact financial performance indicators on a consistent basis (ROA, Tobin's Q, EPS and ROA), the study can provide valuable insights to management about the benefits of integrating sustainability into core business strategies. As an extension, the study is motivated to contribute to society by providing evidence that innovative sustainable business strategies, (if promoted) can have a positive impact on numerous aspects of firm performance, as suggested by (Guo & Lu, 2021).

Using firm-level data from a sample of 716 listed Chinese firms from 2013 to 2019, we examine the impact of CSR on firm performance. We further explore the moderating role of innovation through marketing intensity on the relationship between CSR and firm performance. Data is collected from the Hexun database, China's leading CSR database. Our baseline results show that CSR has significant positive impact on firm performance measured by ROA and Tobin's Q. We also find that innovation through marketing intensity enhance the relationship between CSR and firm performance. The main analysis is robust to a battery of robustness tests. Our empirical findings imply that in China, firms with higher marketing intensity effectively communicate their commitment to sustainable business practices through their CSR scores. This communication helps legitimise the firm's sustainable business strategy, leading customers to develop a more favourable attitude towards purchasing its products and services, which in turn enhances the firm's financial performance. To avoid unnecessary repetition, contributions associated with these results are discussed in-depth in the conclusion section.

The remainder of this paper is organized as follows. The next section provides an overview of relevant literature and develops hypotheses. Section 3 explains the research design including sample selection procedures, variable definitions, and model specifications. Section 4 presents the main results, robustness checks and additional analysis. Section 5 provides the conclusion.

2 | LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

2.1 CSR and Accounting-based financial performance

CSR is seen as an indicator of organisational effectiveness (Carroll, 2008; Hou et al., 2016; Sheehy, 2014). Based on stakeholder and legitimacy theories, various studies show that when firms are more engaged in CSR practices, a more positive image is shown to the public, which in turn enhances a firm's financial performance (Al-Dhamari et al., 2022; Bahta et al., 2021; Hasan et al., 2018; Love, 2010; K. Walker et

al., 2019; Westlund & Adam, 2010), as well as market value (Albuquerque et al., 2019; Bouslah et al., 2013; Choi et al., 2010; Lee & Faff, 2009; Luo & Bhattacharya, 2006; Oikonomou et al., 2012; Orlitzky & Benjamin, 2001; Salama et al., 2011). Thus, a well-established literature exists to infer that a firm's commitment to sustainability practices will have a positive outcome for firms.

However, contrary evidence by Barnea and Rubin (2010) suggests that the association between CSR and firm performance is not positive. More specifically, they surmise that management have an incentive to align themselves with sustainable business practices, to enhance their reputation. However, this self-serving practice is shown to not have the desired effect in enhancing profitability. Brammer and Millington (2008) also find that firms with better social performance do not outperform (or even underperform) their competitors, whose social performance is weaker. Furthermore, Huang's (2021) meta-analysis finds no associations between CSR and firm performance. It is argued that studies pertaining to CSR and firm performance, yielded inconsistent results because; the concept of CSR is too abstract (Soana, 2011); in many instances, CSR is not translated into a quantifiable measures (van Beurden & Gössling, 2008; Waddock & Graves, 1997); and CSR data is not designed to be comparable *per se* (Cho et al., 2012; Michelon et al., 2015; Moneva et al., 2006; Patten & Shin, 2019). Taken together, given the conflicting views discussed above, the literature can be extended where the CSR-firm performance nexus is examined in unique market/social contexts.

In this paper, a sample of Chinese listed firms are selected to examine the association between CSR and firm performance, in the context of differential marketing intensity. China, the world's second-largest economy, has spent nearly four decades achieving its current status, shifting its focus from growth to quality in order to keep pace with developed nations (Li et al., 2019). Under Xi Jinping's leadership, there has been a greater focus on the harmony between the economy and society, as seen in his well-known statement emphasizing the importance of environmental conservation alongside economic growth (Li et al., 2019). China has therefore intensified its CSR development and sustainability practices (Graafland & Zhang, 2014). Thus, insights

from China can provide valuable insights to Chinese, as well as international stakeholders.

Many scholars have examined the relationship between CSR practices and performance in Chinese firms. Gao (2009) reports that CSR has a statistically significant negative effect on performance, but this effect may be because CSR practices are at an early stage in China and are not comparable across firms. Wang *et al.* (2015) finds that the relationship between CSR practices and ROA and ROE was negatively correlated through content analysis of annual reports of firms in 25 industries. Wang *et al.* argue that this may be because market participants are sceptical about the reliability of firms' CSR information and firms have incentives to greenwash through CSR practices. Thus, there is some evidence that the CSR does not have a positive effect on firm performance in China.

However, the majority of studies suggest that CSR will have a positive influence on firm performance in China. Zhu *et al.* (2014) surmises that stakeholders in China seek information about business ethics and CSR. Moreover, that Chinese stakeholders are more likely to support firms with robust CSR performance. By utilizing the Hexun database, Yang *et al.* (2019) reports that pharmaceutical firms with elevated CSR ratings produced greater financial gains, and effectively showcasing alignment between corporate values and stakeholders' desires can boost financial success. Currently, a series of new studies using stakeholder, signalling, legitimacy, and resource dependence theories have found that CSR has a positive impact on accounting-based performance such as ROA and ROE (Chen & Wang, 2011; Dakhli, 2021; Jia, 2020; Qu, 2009; Wang & Qian, 2011; Xiong *et al.*, 2016). On the basis of the foregoing, we hypothesise the following:

H1a: CSR is a positively related to firm accounting-based performance measures.

2.2 CSR and Market-based financial performance

The relationship between CSR and market-based measures such as Tobin's Q

also presents mixed findings. Some scholars obtained negative results (Kao et al., 2018; Lee et al., 2013; S. Lee & Park, 2009; Ruan & Liu, 2021) whilst others reported positive effects (Hu et al., 2018; Liu & Zhang, 2017; Ning et al., 2017; Zhang & Cui, 2020). Based on agency theory, Kao *et al.* (2018) found that as an image management strategy, CSR might be abused by management. When considering industries specifically, the results would be varied in different industries. Zhang and Liu (2019) and Lee (2020) found that a negative correlation exists in the energy and tourism industries, whereas Liu and Zhang (2017) and Zhang and Cui (2020) respectively found that a positive correlation exists between CSR scores and Tobin's Q in high pollution, coal mining, and manufacturing industries. Amadi and Zhao (2020) argues that the study for a single industry could not be used to generalise the relationship between CSR and performance because the results possessed lower predictive validity. The study of Ning, Pan and Xu (2017) did not target a single industry and found that more responsible behaviour makes it easier for firms to acquire intangible assets, which can strengthen their market-based performance in the future. However, the shortcoming of Ning's study is that the sample size used is too small, only 384 firms have been investigated, making it difficult to draw a broadly accepted conclusion. Based on our understanding, we found that no previous study has examined the relationship between CSR and market-based performance through a large sample based on stakeholder, resource dependence, signalling and legitimacy theories, and therefore, we formulate the following hypothesis:

H1b: *CSR is positively correlated with firm market-based performance measures.*

2.3 Marketing Intensity and the CSR-firm performance relationship

Though the relationship between CSR and firm performance has been widely examined, the pathways through which CSR influences performance remain a subject of ongoing research. One critical factor that can moderate this relationship is marketing intensity. Marketing intensity is defined as a firm's marketing efforts aimed at fostering loyalty and building customer relationships (Kurt & Hulland, 2013; Mizik, 2010).

Marketing serves as a powerful tool for disseminating information about a firm's products, services, and values to a broad audience. By intensifying marketing efforts, firms can significantly boost customer awareness of their CSR activities. This enhanced awareness is crucial because it helps shape public perception and attitudes towards the firm. According to Servaes and Tamayo (2013), marketing enhances a firm's information environment, which can indirectly increase the visibility of its CSR efforts. When customers are more aware of a firm's CSR activities, they are more likely to perceive the firm positively, which can translate into increased customer loyalty and higher performance.

In this paper, we argue that the decision of management to deploy their marketing strategy to enhance the value they obtain their CSR activities can be deemed as management innovation. Unlike technological innovation, management innovations refer to new approaches to devising strategy, structure, and processes that change the work of managers and organizational members and outcomes (Vaccaro et al., 2012; Walker et al., 2011). Luo and Bhattacharya (2006) report that corporate abilities expressed in the form of innovative capability can enhance the financial benefits a firm derives from its CSR activities. Therefore, firms that strategically leverage their marketing efforts to effectively communicate their CSR commitments can differentiate themselves from competitors who may not engage in or promote similar activities. This differentiation can be particularly impactful in markets where consumers are increasingly valuing sustainability and ethical business practices (Porter & Kramer, 2006). Moreover, CSR-related marketing can help build a strong brand image and reputation, which are critical assets for long-term financial success.

We also contend that the decision by management to increase marketing intensity as a strategy to promote their CSR activities represents a significant innovation in both thinking and management style. This strategic shift aligns with the resource-based view (RBV) of the firm, which posits that sustainable competitive advantages are derived from the firm's unique resources and capabilities (Barney, 1991). By leveraging marketing to highlight CSR initiatives, firms are not just communicating their social

and environmental contributions but are also enhancing their intangible assets, such as brand reputation and customer loyalty. This innovative approach to CSR communication reflects a proactive management style that integrates marketing and social responsibility, ultimately leading to a stronger market presence and differentiation from competitors.

Additionally, signalling theory suggests that marketing CSR activities sends a positive signal to the market about the firm's commitment to ethical practices and social responsibility (Spence, 1973). This positive signalling can improve the firm's reputation and attract a customer base that values corporate ethics, leading to increased sales and market share. Empirical evidence supports the notion that advertising, which is a component of marketing, can amplify the benefits of CSR on firm performance. Luo and Bhattacharya (2006) demonstrate that firms with robust CSR advertising enjoy better financial performance and lower capital costs due to enhanced stakeholder trust. Additionally, promoting CSR through advertising can foster a positive corporate image, which can mitigate risks associated with negative publicity and enhance investor confidence.

Luo and Bhattacharya (2009) found that the positive impact of CSR on firm value is more pronounced in firms with higher advertising intensity. This suggests that advertising not only raises awareness but also reinforces the firm's commitment to CSR, making its initiatives more credible and impactful. Furthermore, advertising can help bridge the gap between CSR activities and financial outcomes by highlighting the tangible benefits of CSR, such as improved community relations and environmental stewardship, thereby appealing to both customers and investors. This suggests that firms that strategically leverage advertising to promote CSR initiatives, can enhance their visibility, strengthen stakeholder relationships, and ultimately achieve superior financial outcomes.

Concluding from these arguments, we formulate the following hypotheses:

H2a: Marketing intensity moderates the relationship between CSR and accounting-based financial performance such that the positive impact of CSR on accounting-

based financial performance is stronger for firms with higher marketing intensity.

H2b: *Marketing intensity moderates the relationship between CSR and market-based financial performance such that the positive impact of CSR on market-based financial performance is stronger for firms with higher marketing intensity.*

3 | METHODOLOGY

3.1 Data and Sample Selection

The data used to evaluate the impact of CSR on firm performance were collected from the Hexun database, a widely employed CSR database in Chinese CSR research (Pan et al., 2014; Rahman & Fang, 2019; Xiong et al., 2016; Yang et al., 2019). Data on financial performance and corporate governance were obtained from the China Stock Market and Accounting Research (CSMAR) databases. The study period is between 2013 and 2019. 2013 is selected as the initial period, because CSR data becomes more regularly available on the Hexun database. We select 2019 as the final year due to the intervening effect of the Covid pandemic on financial performance. The initial sample consisted of 4,732 listed on the Shanghai and Shenzhen Stock Exchanges. To ensure data accuracy and validity, the following screening criteria were applied: (1) 251 financial, insurance and real estate firms have been excluded because the financial report structure is different from the non-financial firms; (2) 219 special treatment (ST) and *ST labels firms have been excluded because the label indicates those firms are experiencing financial difficulties; (3) 3,546 of firms with no available data in Hexun (2,720) and CSMAR (826) database has been excluded. After the screening process, the final sample consisted of 2,735 firm-year observations from 716 firms have been employed in this research. Table 1 presents the sample selection procedures.

Table 1 Sample Selection and distribution

Panel A: Selection of firms

Total number of firms listed on the Shanghai and Shenzhen Stock Exchange as of December 31,2021	4732
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Less:

Firms in financial, insurance and real estate industries	(251)
Firms with special treatment (ST) and *ST labels	(219)
Firms without data available in Hexun database	(2720)
Firms without data available in CSMAR database	(826)

Final sample	716
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Panel B: Sampled firms according to their primary industry classification:

Farming, Forestry, Animal Husbandry, and Fishery	12
Mining	33
Manufacturing	428
Production and supply of electric power, thermal power, gas, and water	41
Construction	25
Wholesale and Retail	45
Transport	42
Hotel	1
Software and Information Technology Service	44
Leasing and Business Service	11
Scientific Research and Technology Service	4
Water, Environment and Public Facilities Management	10
Health and Social Work	4
Culture, Sport & Entertainment Industry	13
Conglomerates	3

Final sample	716
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3.2 Variables measurement

3.2.1 Financial Performance measures

Table 2 presents the description of the variables used in the study. To capture firm performance, we employed both accounting-based and market-based measures.

Following prior studies, we use Return on Asset (ROA) as our accounting-based measure of firm performance and Tobin's Q as market-based measure. ROA reflects operational efficiency (Kuzey et al., 2021) and Tobin's Q represents investors' expectations of a firm's long-term prospects and potential growth capacity (Yoon & Chung, 2018). ROA is calculated as net profit divided by total assets, and Tobin's Q is calculated as the sum of the market value of equity and total liability divided by the book value of total assets. Unlike, prior studies which use either accounting- based or market-based measures, we employ both measures in order to capture a more holistic view of the firm's performance both in the short-term as reflected by ROA and long-term as captured by Tobin's Q (see Servaes and Tamayo, 2013). For robustness checks, we use alternative measures of performance such as EPS and ROE.

3.2.2 CSR scores

The CSR scores calculated under the Hexun CSR system are divided into five dimensions: i) shareholder responsibility, ii) employee responsibility, iii) supplier, client, and consumer responsibility, iv) environmental responsibility, and v) social responsibility. Each dimension includes a series of sub-indicators to provide a comprehensive assessment of CSR. Appendix A contains detailed information about each component of the Hexun CSR scoring mechanism. The overall CSR scores for our main variable of interest range from 0 to 100.

3.2.3 Marketing Intensity

Marketing Intensity (MI) is measured as the ratio of selling, general and administrative expenses (SG&A) to sales. A common practice in measuring marketing intensity focuses solely on advertising expenditure (Srinivasan et al., 2011), but this approach overlooks key marketing expenses like sales staff salaries, commissions, and operating costs (Kurt & Hulland, 2013). We use selling, general and administrative expenses (SG&A) from profit and loss statements, covering all marketing costs. This includes advertising, various marketing activities, digital interfaces, staff salaries, free samples, and non-price-related rebates. Discounts, price promotions, and price-linked

rebates are excluded, as they impact sales rather than marketing intensity. We scaled the SG&A expenses by sales to account for firm size.

3.2.4 Control Variables

To mitigate potential confounding effects, several control variables were added to our model. The finance literature suggests that firm size, leverage, systematic risk, sales growth, corporate governance characteristics may influence firm's performance. Firm size (FIRMSIZE) is measured as the natural logarithm of total assets and used to ensure that the results would not be influenced by firm size. Prior studies report a positive relationship between firm size and financial performance (Mahoney & Roberts, 2007; Ruan & Liu, 2021). LEV is measured by the ratio of total debt to total assets. High leverage indicates a high level of financial risk, negatively affecting corporate performance (Jermias, 2008). BETA is measured as the systematic risk of the stock market that hurts firm performance (Elshandidy et al., 2015; Kyiu & Vincent, 2023). SG is calculated by taking the current year's sales minus the previous year's sales and then dividing the results by the previous year's sales. The relationship between sales growth and firm performance is expected to be positive (Bansal & Roth, 2000). Number of board meetings (BMT) calculated as the number of board meetings during the year. Board independence (BIND) expressed as a percentage of independent directors to total number of members on the board. CEO-chair duality (DUALITY) which takes on value of 1 if CEO and chairman are the same person, 0 otherwise. Board gender diversity (BGD) expressed as percentage of female directors to total number of directors on the board. Shareholding ratio of the largest shareholder (SRLS) computed as the proportion of number of shares owned by the largest shareholders to total outstanding common shares and Equity nature (EN) which takes the value of 1 if the firm is a state-owned enterprise (SOE), 0 otherwise.

3.3 Empirical Model

To investigate whether CSR impacts firm performance, we employed a regression model that integrates firm-level control variables while also considering year, industry and firm fixed effects. The regression model used to test our hypothesis is defined as follows:

$$FP_{i,t} = \alpha + \beta \times CSR_{i,t} + Firm - level\ Controls_{i,t} + YearFE + IndustryFE + FirmFE + \varepsilon_{i,t} \quad (1)$$

To further examine if the relationship between CSR and firm performance is influenced by management innovation through marketing intensity, we employ the following regression model:

$$FP_{i,t} = \alpha + \beta_1 \times CSR_{i,t} + \beta_2 \times MI_{i,t} + \beta_3 \times CSR_{i,t} \times MI_{i,t} + Firm - level\ Controls_{i,t} + YearFE + IndustryFE + FirmFE + \varepsilon_{i,t} \quad (2)$$

where i indicates firm and t indicates year. FP_{it} represents the financial performance measures (ROA and Tobin's Q). While our main focus is on accounting profitability (ROA), we also employ Tobin's Q, a stock-market-based indicator of anticipated future earnings growth, as the dependent variable in our models (1) and (2). Tobin's Q serves as a comprehensive measure of a firm's projected profit trajectory, under the assumption of stock market efficiency. This makes it a distinct, yet conceptually aligned indicator for evaluating financial performance and has been used extensively in prior business research (e.g., Kyere & Ausloos, 2021; Lin, Lee & Hung, 2006; Vizcaíno & Chousa, 2016). CSR denotes the CSR scores; MI represents marketing intensity. Table 2 presents all the control variables and classifies all the variables into three categories. The first type is financial-related variables. The firm-level control variables include $FSIZE$, LEV , $BETA$, SG , BMT , $BIND$, $DUALITY$, BGD , $SRLS$ and EN . $YearFE$, $IndustryFE$ and $FirmFE$ are unobserved factors that are distinctive to a particular time period, industry and firm, respectively. The error term $\varepsilon_{i,t}$ captures the residual fluctuations in firm performance at the firm level that are not

accounted for by the explanatory factors in the model. The description of the variables can be found in Table 2.

In the estimation of the models (1) & (2), the fixed effects (FE) and random effects (RE) techniques were considered. The choice between the FE model and RE model was determined by Hausman specification test.

Table 2 Description of the variables

Variable name	Description of the variables
Dependent variables	
Return on Assets (ROA)	Net profit divided by total assets at the end of a financial year
Tobin's Q	The sum of market value of equity and total liability divided by total assets
Independent variable	
Corporate social responsibility (CSR)	The overall Hexun CSR score, ranging from 0 to 100
Moderating Variable	
Marketing Intensity (MI)	Selling, General and Administrative expenses (SG&A) divided by sales
Control variables	
Financial-related variables	
Firm size (FSIZE)	Natural logarithm of a firm's total assets at the end of a financial year
Leverage (LEV)	A firm's total debt divided by its total assets
Systematic risk (BETA)	Equity beta, calculated based on the Capital Asset Pricing Model (CAPM) using the daily stock returns of the latest 250 trading days.
Sales growth (SG)	Current year's sales minus previous year's sales divided by previous year's sales
Governance-related variables	
Number of board meetings (BMT)	The number of board meetings during the year

Board independence (BIND)	Percentage of independent directors to total number of members on the board
CEO-chair duality (DUALITY)	1 if CEO and chairman are the same person, 0 otherwise
Board gender diversity (BGD)	Percentage of female directors to total number of directors on the board
Shareholding ratio of the largest shareholder (SRLS)	Proportion of shares owned by the largest shareholders to total outstanding common shares
Equity nature (EN)	1 if the firm is a state-owned enterprise (SOE), 0 otherwise

3.4 Descriptive statistics and correlations

Table 3 presents the descriptive statistics. The mean ROA for the sample is 5%, with a minimum of -45% and a maximum of 48%. The mean value of Tobin's Q is 2.10, with a range between 0.74 and 29.37. This indicates that the firms' average market value is approximately twice that of the replacement cost of their assets. In addition, the mean score for CSR is 61.18, ranging from 12.44 to 90.87 with a standard deviation of 10.02, suggesting that there is a large difference in CSR among the firms. The mean value for marketing intensity is 3.7% suggesting that firms in our sample spend averagely 3.7% of their sales revenue on marketing. The range for marketing intensity is from 0.00 to 18.4%. This indicates that some firms within our sample do not spend marketing whilst others spend at most 18.4% of their sales revenue on marketing.

Table 3: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Median	Min	Max
ROA	2735	0.050	0.060	0.050	-0.450	0.480
Tobin's Q	2735	2.100	1.470	1.620	0.740	29.370
EPS	2735	12.010	9.340	13.670	-5.360	32.540
ROE	2735	0.060	0.061	0.050	-0.430	0.490
CSR	2735	61.180	10.020	61.370	12.440	90.870
MI	2735	0.037	0.049	0.028	0.000	0.184
FSIZE	2735	22.830	1.410	22.700	19.540	28.410
LEV	2735	0.470	0.200	0.490	0.010	1.350
BETA	2735	1.170	0.280	1.180	-2.700	2.040
SG	2735	0.380	7.140	0.130	-0.950	357.090
BMT	2735	9.680	4.180	9.000	2.000	57.000

BIND	2735	37.790	7.340	36.360	20.000	75.000
DUAL	2735	0.160	0.370	0.000	0.000	1.000
BGD	2735	11.120	11.180	10.000	0.000	55.560
SRLS	2735	38.330	16.160	38.330	3.390	88.550
EN	2735	0.620	0.490	1.000	0.000	1.000

Note: Descriptions for all variables are available in Table 2.

Table 4 presents the Pearson correlations for the main variables. Consistent with the prediction, we find the association between CSR and the accounting-based measure (ROA) to be positive and significant at the 1% level. Similarly, the association between CSR and the market-based measure (Tobin's Q) is also positive and significant at the 1% level. The preliminary pairwise correlation results indicate a positive relation between CSR and firm performance suggesting that firms can financially benefit from their engagement in CSR activities. We also find the association between marketing intensity and ROA to be positive and significant at 5% but positive and significant at 10% with Tobin's Q. This also indicates that marketing efforts of firms can enhance their performance.

Regarding the control variables, consistent with the expectation, LEV and Beta have a statistically significant negative correlation with both ROA and Tobin's Q. This indicates that firms with higher leverage and greater systematic risks are more likely to experience a decline in firm performance. There is a significant positive relationship between DUALITY, and firm performance, suggesting that firms where the role of CEO and chairman are directed by one individual perform better than those where the two roles are independent. BGD is found to be positively correlated to both ROA and Tobin's Q, indicating that board gender diversity can contribute to better firm performance. Most of the correlation coefficients reported in Table 4 are less than 0.3, suggesting that there is no severe multicollinearity concern.

Table 4: Correlation matrix

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. ROA	1															
2. Tobin's Q	0.20***	1														
3. EPS	0.18***	0.26***	1													
4. ROE	0.22***	0.12***	0.15***	1												
5. CSR	0.13***	0.12**	0.22***	0.28***	1											
6. MI	0.18**	0.05*	0.09**	0.14**	0.07**	1										
7. FSIZE	0.10***	0.37***	0.42***	0.24***	0.21***	0.06***	1									
8. LEV	-0.23***	-0.25***	-0.27***	-0.21***	-0.13***	0.28***	0.33***	1								
9. BETA	-0.18***	-0.09***	-0.13***	-0.14***	-0.10***	-0.10***	-0.08	0.01	1							
10. SG	0.01*	0.01*	0.02*	0.04**	-0.04**	-0.02*	0.12**	0.04**	-0.02	1						
11. BMT	0.08***	0.12***	0.05***	0.07**	0.03**	0.14***	0.08***	0.14***	0.04**	0.04**	1					
12. BIND	0.02*	0.03*	0.07**	0.10*	0.04**	0.06***	0.04	-0.02	-0.02	-0.01	0.03*	1				
13. DUAL	0.12***	0.11***	0.14***	0.16***	0.02	-0.12***	-0.06***	-0.14***	0.02	0.00	0.02	0.10***	1			
14. BGD	0.07***	0.09***	0.12***	0.05**	0.04**	-0.19***	0.22***	-0.14***	-0.04**	0.04**	0.02	0.01	0.09***	1		
15. SRLS	0.02*	0.14***	-0.13***	0.10***	0.11***	0.28***	-0.02	0.07***	-0.11***	-0.03	-0.07***	0.03	-0.12***	-0.12***	1	
16. EN	-0.19***	-0.18***	-0.20***	-0.14***	-0.01	0.34***	-0.15**	0.26***	0.00	-0.04**	-0.07***	-0.11***	-0.29***	-0.22***	0.30***	1

Notes: *, **, and *** indicate level of significance at 10%, 5%, and 1%, respectively.

4 | RESULTS AND DISCUSSION

4.1 Baseline results

This section discusses the results of the panel data regression analysis based on model 1. In the estimation of model (1), both fixed effects (FE) and random effects (RE) techniques were considered. To determine the appropriate model, the Hausman specification test was employed. Using the Hausman (1978) specification test, the null hypothesis of random effects was rejected at the 1% significance level, indicating that the fixed effects model is the most efficient estimator for the regression model. Table 5 presents the findings for our baseline model. Robust standard errors are clustered at the firm level to account for potential heteroscedasticity.

As anticipated, the results show a positive and statistically significant relationship between CSR and ROA at the 1% level, with the coefficient suggesting that a 1-unit increase in a firm's CSR score results in a 0.26% rise in ROA. Similarly, the relationship between CSR and Tobin's Q is positive and significant at the 10% level, consistent with our hypothesis. While previous research on the link between CSR and firm performance has produced mixed results, our findings support the view that CSR positively impacts firm performance.

Using legitimacy theory, this result can be explained by firms' desire to align with societal expectations. By engaging in CSR activities, companies signal their commitment to ethical and responsible practices, enhancing their legitimacy in the eyes of stakeholders. This increased legitimacy helps firms attract loyal customers and investors who perceive the company as a trustworthy and responsible entity, thereby contributing to improved financial performance.

From the perspective of signal theory, firms use CSR as a tool to signal their quality and long-term sustainability to the market. CSR activities serve as a positive signal to customers, investors, and other stakeholders that the firm is stable, forward-thinking, and committed to broader societal goals. These signals help differentiate the firm from competitors and foster a favourable perception, which can lead to improved performance indicators like ROA and Tobin's Q. Our results align with previous research showing the positive impact of CSR on firm performance (Alawi, 2024; Hong et al., 2024; Qiao, 2024),

and reinforce the idea that CSR activities not only boost a firm's reputation but also contribute to its financial success.

Similar to previous studies (Choi et al., 2010; Ruan & Liu, 2021), among the control variables, Model 1 suggests that firm size (FSIZE) is positive and statistically significant (at the 1% level) to ROA, Furthermore, we find a positive relationship between CSR and Tobin's Q, to be positive and significant at 1% level. This is because large firms are more likely to undertake CSR activities on a large scale and therefore benefit immensely from them (Canarella & Miller, 2022). Conversely, we find the relationship between leverage (LEV), Beta (BETA), CEO duality (DUAL), Equity Nature (EN) and ROA and Tobin's Q to be negative and statistically significant at the 1% level. The negative relationship between leverage and ROA suggests that as firms increase their gearing, the increased cost of debt financing exceeds the benefits derived from debt financing which results in decrease in firm performance. The negative relationship found between BETA and firm performance suggests that firms with higher systematic risk are more likely to show weaker performance (Lee & Jang, 2007).

The results also suggest that the number of board meetings (BMT), board independence (BIND), and the proportion of shares owned by the largest shareholders (SRSL) are positively related to ROA and Tobin's Q indicating that these corporate governance characteristics are important in enhancing firm performance.

Table 5: The direct effect of CSR on Firm Performance

Variables	Pred. Sign	Model 1	Model 2
		ROA	Tobin's Q
CSR	+	0.0026*** (26.8034)	0.0007* (1.9296)
FSIZE	+	0.0036*** (4.2344)	0.0047*** (5.7201)
LEV	—	-0.1100*** (-19.7546)	-0.1470*** (-21.0022)
BETA	—	-0.0257*** (-7.6747)	-0.0459*** (-9.2779)
SG	+	0.0003** (2.3545)	0.0002*** (5.4012)

BMT	+	0.0005** (2.2222)	0.0009* (1.9973)
BIND	+	0.0002* (2.0363)	0.0017** (2.6483)
DUAL	–	-0.0057** (-2.374)	-0.0089** (-2.429)
BGD	+	0.0001 (-0.5915)	0.0036* (1.9253)
SRLS	+	0.0002* (1.9222)	0.0236*** (3.2359)
EN	+/-	-0.0117*** (-5.6293)	-0.0258*** (-6.2661)
Constant	?	-0.0855*** (-3.0074)	-0.0634*** (-3.1245)
Observations		2735	2735
R-sq		0.4464	0.3566
Adj R-sq		0.4442	0.3449
Industry FE		Yes	Yes
Firm FE		Yes	Yes
Year FE		Yes	Yes
F value		199.6104***	138.7614***
Robust Hausman χ^2		89.002	63.892
Prob > χ^2		0.000***	0.000***

This table presents the result of the direct effect of CSR on firm performance. The accounting-based measure in model 1 is ROA and the market-based measure in model 2 is Tobin's Q. All models are estimated using FE. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

4.2 CSR and firm performance: the role of marketing intensity

In this section, we examine whether marketing intensity influences the relationship between CSR and firm performance. Our hypothesis posits that higher marketing intensity amplifies the positive impact of CSR on performance. To test this, we include an interaction term between CSR and marketing intensity (MI). The results in Table 6 confirm this hypothesis, as the interaction term (*CSR *MI*) shows a positive and statistically significant relationship with ROA at the 1% level. Similarly, the relationship between *CSR*MI* and Tobin's Q is positive and significant at the 5% level. These findings indicate that firms with

higher marketing intensity experience greater performance gains from CSR activities, underscoring the role of marketing in maximising the benefits of CSR.

From the lens of legitimacy theory, these results suggest that marketing efforts help firms strengthen their social legitimacy by communicating CSR initiatives more effectively to external stakeholders. When firms invest heavily in marketing, they enhance public awareness of their CSR activities which solidify their status as responsible corporate citizens. This increased legitimacy boosts customer trust and loyalty, thereby leading to improved firm performance. In essence, marketing amplifies the legitimacy that CSR confers, translating into better financial outcomes.

Using signal theory, we can interpret these results as firms leveraging marketing to signal their commitment to CSR more effectively. By increasing marketing intensity, firms send stronger signals to the market about their dedication to ethical and sustainable practices. This heightened visibility of CSR efforts through marketing differentiates the firm from competitors and fosters positive perceptions among stakeholders. The positive and significant interaction between CSR and marketing intensity indicates that the more a firm spends on marketing, the more it can capitalize on the signalling effect of CSR, leading to enhanced financial performance.

Overall, our findings reveal that marketing plays a crucial role in magnifying the positive impact of CSR on firm performance, and this aligns with the notion that firms that effectively communicate their CSR efforts through marketing enjoy higher returns (both in terms of ROA and Tobin's Q). This also suggests that CSR and marketing together enhance a firm's reputation and stakeholder relations, ultimately driving better performance outcomes.

Table 6: The moderating role of innovative marketing intensity in the CSR -Firm Performance relationship

Variables	Pred. Sign	Model 1	Model 2
		ROA	Tobin's Q
CSR	+	0.0017*** (19.9301)	0.0024** (5.4362)
MI	+	0.0458*** (4.2435)	0.0698*** (6.7376)
CSR*MI	+	0.0037*** (4.1008)	0.0028** (2.1440)

FSIZE	+	0.0023*** (3.2938)	0.0096*** (4.7279)
LEV	—	-0.0659*** (-13.9865)	-0.0662*** (-10.2235)
BETA	—	-0.0098*** (-3.5513)	-0.0101*** (-5.6325)
SG	+	0.0001* (1.9281)	0.0003*** (4.9855)
BMT	+	0.0004** (2.0574)	0.0011** (2.3366)
BIND	+	0.0001* (1.8902)	0.0003* (1.9901)
DUAL	—	-0.0034* (-1.8332)	-0.0049** (-2.1332)
BGD	+	0.0020* (2.0113)	0.0036** (2.3980)
SRLS	+	0.0003* (1.9751)	0.0001* (1.9590)
EN	+/-	-0.0077*** (-4.4996)	-0.0089*** (-6.1258)
Constant	?	-0.0646*** (-3.5229)	-0.0325 (-2.4367)
Observations		2735	2735
R-sq		0.4698	0.3678
Adj R-sq		0.4673	0.3648
Industry FE		Yes	Yes
Firm FE		Yes	Yes
Year FE		Yes	Yes
F value		185.3184***	121.8253***
Robust Hausman χ^2		68.002	43.892
Prob > χ^2		0.000***	0.000***

This table presents the result of the moderating role of Innovative marketing intensity on the relationship between CSR and firm performance. The accounting-based measure in model 1 is ROA and the market-based measure in model 2 is Tobin's Q. All models are estimated using FE. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

4.2 Robustness Check

4.2.1 Alternative Measures for Performance

In this section, we examine the robustness of baseline results by using alternative proxies for firm performance. In so doing, we employ earnings per share (EPS) and return on equity (ROE) as alternative measures to ROA (see Table 7). Our findings show that CSR has positive and significant impact on EPS at the 1% level. We also find the relationship between the interaction term (CSR*MI) and EPS to be positive and statistically significant

at 1%. We document similar results for ROE. CSR has positive and significant impact on ROE at 1% level. We also find that the interaction term and ROE are positive and statistically significant at 1% level. These findings corroborate our baseline results and supports our hypothesis that CSR has positive impact on firm performance, however, the impact of CSR on firm performance is stronger for firms who are innovative in marketing CSR activities. This validates the robustness of our results.

Robustness checks

Table 7: Alternative measures of firm Performance

Variables	Pred. Sign	Model 1	Model 2	Model 3	Model 4
		EPS	EPS	ROE	ROE
CSR	+	0.0041*** (29.8139)	0.0026*** (26.8034)	0.0087*** (5.8678)	0.0056*** (2.9477)
MI	+		0.06782*** (3.7641)		0.03498*** (7.7980)
CSR*MI	+		0.0030*** (5.7769)		0.0061*** (6.8902)
FSIZE	+	0.0048*** (5.2563)	0.0036*** (4.2344)	0.3367*** (14.8865)	0.2961*** (12.5327)
LEV	—	-0.1467*** (-24.1122)	-0.1100*** (-19.7546)	-1.4129*** (-8.3665)	-1.1734*** (-7.5078)
BETA	—	-0.0309*** (-9.5539)	-0.0257*** (-7.6747)	-0.8921*** (-7.8882)	-0.7353*** (-7.8210)
SG	+	0.0002*** (5.5721)	0.0003** (2.3545)	0.0028** (2.3352)	0.0021* (1.8351)
BMT	+	0.0005** (2.2239)	0.0005** (2.2222)	0.0027** (2.3886)	0.0022** (2.3706)
BIND	+	0.0002** (2.0399)	0.0002** (2.0363)	0.0049*** (2.6767)	0.0049*** (2.4767**)
DUAL	—	-0.0064*** -3.387	-0.0057** -2.374	-0.1125** (-2.4596)	-0.1125* (-1.7596)
BGD	+	0.0004* (1.8915)	0.0001 (1.6915)	0.0032* (2.1943)	0.0022* (1.9795)
SRLS	+	0.0006*** (2.9329)	0.0004** (2.2329)	0.0041** (2.2667)	0.0037** (2.2584)
EN	+/-	-0.0128*** (-6.6774)	-0.0117*** (-5.6293)	-0.1003** (1.9437)	-0.1153** (1.9992)

Constant	?	-0.1557*** (-5.0010)	-0.0855*** (-3.0074)	-9.3045*** (-20.3401)	-11.3077*** (-14.1663)
Observations		2735	2735	2735	2735
R-sq		0.4054	0.4155	0.4224	0.4454
Adj R-sq		0.4030	0.4127	0.4201	0.4428
Industry FE		Yes	Yes	Yes	Yes
Firm FE		Yes	Yes	Yes	Yes
Year FE		Yes	Yes	Yes	Yes
F value		168.4983***	148.9758***	181.0466***	168.3022***

This table presents the result of the direct effect and moderating role of Innovative marketing intensity on alternatives firm performance measure (EPS and ROE). All models are estimated using FE. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

4.2.2 2-step system GMM

We employ the generalised method of moments (GMM) estimator developed by Arellano and Bond (1991) along with its later refinements (Roodman, 2009). The GMM estimator remains consistent in the presence of unobservable heterogeneity across sections, especially as the number of cross-sections (N) increases asymptotically. To address potential sample selection bias, we apply the two-step GMM selection model, which is particularly effective when the sample selection process is non-random, leading to biased and inconsistent estimates. The results of this analysis are presented in Table 8. We also report the second-order autocorrelation test by Arellano and Bond (denoted AR(2)) and Hansen's test for instrument validity in the tables. A 5% significance level is used to assess the statistical significance of variables and to check for autocorrelation or invalid instruments. All models are valid for inference, as no evidence of second-order autocorrelation or invalid instruments is found. Overall, the results support our main findings, demonstrating that marketing intensity moderates the relationship between CSR and firm performance, even after accounting for potential selection bias.

Table 8: Two-step system GMM results

Variables	Pred. Sign	Model 1	Model 2
		ROA	Tobin's Q
CSR	+	0.0017*** (20.2244)	0.0021** (4.8921)
MI	+	0.0523*** (5.9223)	0.0671*** (6.2298)
CSR*MI	+	0.0042*** (4.9800)	0.0028*** (3.5623)

FSIZE	+	0.0054*** (4.0083)	0.0088*** (6.4176)
LEV	–	-0.0651*** (-15.9224)	-0.0655*** (-11.6703)
BETA	–	-0.0091*** (-4.3201)	-0.0144*** (-6.6221)
SG	+	0.0010** (2.3981)	0.0009*** (5.6675)
BMT	+	0.0008** (2.0632)	0.0010** (2.2134)
BIND	+	0.0000* (1.9490)	0.0002* (1.9541)
DUAL	–	-0.0035** (-2.2332)	-0.0052** (-2.1022)
BGD	+	0.0018** (2.1121)	0.0032** (2.4991)
SRLS	+	0.00013* (1.8783)	0.0002* (1.8590)
EN	+/-	-0.0063*** (-5.4112)	-0.0088*** (-6.1562)
Constant	?	-0.0666*** (-3.3560)	-0.0324*** (-5.3789)
AR (1) <i>p-value</i>		0.000	0.000
AR (2) <i>p-value</i>		0.781	0.624
Hansen <i>p value</i>		0.732	0.640
Industry FE		Yes	Yes
Firm FE		Yes	Yes
Year FE		Yes	Yes
Observations		2735	2735
Number of firms		716	716
Number of Instruments		30	30
Chi2 <i>p-value</i>		0.000	0.000

Notes: This table presents the results for the two-step system GMM model. The dependent variables are ROA in model 1 is and Tobin's Q in model 2 is. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

5 | DISCUSSION AND CONCLUSION

The study makes several contributions. First, firms that integrate sustainability into business practices, are recognised as fulfilling the expectations of stakeholder (Delmas & Pekovic, 2018; Larson, 2000). Moreover, many suggest that sustainable innovation and firm performance is linked (Boons et al., 2013; Cillo et al., 2019; Ketata et al., 2015). However, social innovation is a developing literature. Thus, Adams *et al.* (2023) surmises that further research is required to explicitly demonstrate how sustainable business

practices, can affect financial performance. Using a Chinese sample, we provide empirical evidence that CSR has a positive effect on various measures of firm performance. Moreover, we find that higher marketing intensity amplifies the financial gains firms achieve from their CSR activities.

Second, the study extends knowledge by providing new insights about the CSR-firm performance nexus. The association between CSR and firm performance is considered to be miss-specified in the extant literature (Aguinis & Glavas, 2012; Cheng et al., 2014; Servaes & Tamayo, 2013). Based on evidence that marketing intensity has a positive impact on firm performance, (Jaisinghani et al., 2020; Markovitch et al., 2020), we envision that marketing intensity may be an important variable, neglected by previous studies, which reduces the predictive validity of empirical tests. More specifically, a seminal concept of legitimacy theory, is the proposition that an alignment between the values of stakeholders and firm, is fundamental to develop public trust and long-term business success (Deegan, 2009; Ruland & Lindblom, 1994). Based on this premise, Servaes and Tamayo (2013) suggest that marketing intensity may be utilised to influence societal stakeholders. Our findings suggest that marketing intensity, has the potential to legitimise sustainability practices in the eyes of the public/consumers. Thus, we contribute to practice on an applied basis, with evidence that in the absence of marketing (intensity), societal stakeholders may not be exposed to a firm's sustainable innovation practices, indicated by CSR scores. In short, sustainable innovation in isolation may not be sufficient to influence stakeholders. Thus, firms should consider effective strategies to communicate their sustainable business activities.

Third, the extant literature lacks studies that utilise an emerging economy sample, to provide evidence of an empirical association between sustainable innovations and firm performance (Gërguri-Rashiti et al., 2017; Jaiswal & Zane, 2022). We utilise a Chinese sample, because China is the world's largest emerging economy, and the highest emitter of CO₂ (World Bank, 2024; Yu et al., 2020). However, to address China's environmental problems, President Xi Xing Ping has introduced numerous initiatives to enhance business sustainability (Li et al., 2019). We provide evidence that due to legislative interventions; societal stakeholders/customers are more willing to support firms, in an instance where CSR activities are effectively communicated via marketing. The study therefore contributes to knowledge by providing unique insights to the behaviour of Chinese customers, and their

preference to support firms that promote sustainable business practices. However, these results are not easily generalisable to an international audience. Thus, we encourage future studies to replicate this analysis on a comparative analysis basis, in developing/developed countries.

Fourth, the Chinese government has implemented numerous sustainability policies, based on the philosophy that enhanced sustainability will have a positive effect on the Chinese economy (Ang et al., 2022; Guo & Lu, 2021). We provide evidence that the interaction between CSR and advertising intensity has an incrementally positive effect on numerous forms of firm performance (ROA, Tobin's Q, EPS and ROA). The study therefore supports the view that the introduction of sustainability policies in China has had the desired effect. As an extension, our findings speak to management on an applied basis. For managers who have developed sustainable business practices, we encourage those management to develop strategies to effectively communicate sustainable business strategies to societal stakeholders, via effective marketing campaigns.

Finally, limitations and additional avenues for future studies are discussed. Workforce human capital has the potential to affecting firm performance (Attah-Boakye, 2024; Lim and Mali, 2023; Lim et al., 2022, 2024; Mali and Lim, 2023). However, because this data is not widely available in China, human capital data is not included in the study. Future studies may investigate whether human capital moderates the effect of HC on social innovation-performance. This study employs Hexun CSR aggregate scores to measure the CSR 'performance'. While it is regarded as a relatively objective and reliable database to capture CSR scores, many argue that CSR are symbolic, and permissible to greenwashing (Cho et al., 2014; Michelon et al., 2015; Moneva et al., 2006; Patten & Shin, 2019). Thus, it is not possible to rule out whether CSR, social innovation and/or sustainability perceptions are equal to reality. An alternative interpretation of our results is that those firms with the most effective 'greenwashing' strategy, that effectively use marketing intensity to promote sustainability, become the more profitable. Future studies may investigate the extent to which customers and stakeholders, consider the effect that CSR have on their attitudes to support specific firms. Further studies may also investigate whether a firm's commitment to sustainability is different following the pandemic period, when sufficient data is available.

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