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Corporate Social Responsibility and Firm Performance: Investigating the Role of Management Innovation Through Marketing Intensity

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ABSTRACT

This study investigates the relationship between Corporate Social Responsibility (CSR) and firm performance using panel data from 716 Chinese firms listed on the Shanghai and Shenzhen Stock from 2013 to 2019. It further examines the role of management innovation, specifically marketing intensity, in moderating the CSR–financial performance relationship. The findings reveal that CSR has a positive and statistically significant impact on firm financial performance. Moreover, firms with higher marketing intensity derive greater financial benefits from their CSR activities. These results deepen the understanding of how CSR contributes to firm performance and highlight the strategic value of marketing in amplifying the returns from sustainability efforts. Marketing intensity appears to legitimize sustainability efforts in the eyes of stakeholders, thereby strengthening the financial returns from CSR. Our findings offer valuable practical and policy implications for firms and decision-makers aiming to integrate CSR into their strategic and operational frameworks.

1 | Introduction

A firm's commitment to sustainable business practices is increasingly becoming an important consideration for society (Carroll 2008). 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 and 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, among others (Brammer and Pavelin 2006; Doh and Guay 2006; Jeong et al. 2018; McWilliams and Siegel 2001; Porter and Kramer 2006). On the other hand, negative or insignificant associations are also widely reported (Brammer and Millington 2008; Huang 2021; Mahoney and Roberts 2007; Rupley et al. 2012). These mixed results are causes of academic tension. Evidence that marketing intensity may enhance the explanatory power of the relationship between CSR and firm performance would offer practical insights for management on how sustainable practices can be leveraged to improve profitability. Therefore, we raise the following research question: To what extent does marketing intensity moderate the relationship between CSR and firm performance? Marketing intensity is defined as a firm's marketing efforts aimed at fostering loyalty and building customer relationships (Kurt and Hulland 2013; Mizik 2010).

This study is motivated by several key reasons. 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 and 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; Peerally et al. 2022; Rattalino 2018). However, as Adams et al. (2023) explain, further research is required to address how a firm's decision to implement sustainable innovations can influence its performance. Therefore, using theories such as stakeholder, signaling, legitimacy, and resource dependence, we are motivated to introduce marketing intensity, as business strategy, 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 and 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 not previously captured in the extant literature. Therefore, this study addresses this gap in the literature.

Second, measurement errors and methodological concerns are often cited as key reasons why the relationship between CSR and firm performance remains inconclusive (Aguinis and Glavas 2012; Cheng et al. 2014; Servaes and Tamayo 2013). The literature therefore suggests that an important intervening variable may be omitted from the CSR-firm performance nexus (Al-Shammari et al. 2022). 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 assert that marketing intensity plays a vital role in legitimizing business activities. More specifically, a firm that actively engages in CSR and intensifies the marketing of its sustainable business strategies, products, and services increases its visibility among stakeholders, including both current and potential customers (Servaes and Tamayo 2013). Thus, to extend the CSR-firm performance literature, we investigate whether marketing intensity moderates the relationship between CSR and firm performance.

Third, Jaiswal and Zane (2022) argue that sustainable innovation concepts are not well understood in emerging economies. Similarly, 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. To address this context gap, this study uses a sample of Chinese firms. China, as the world's largest emerging economy (World Bank 2024) and the world's largest CO_2 emitter (Yu et al. 2020), provides a unique context for this research. Over the past four decades, China has shifted its focus from rapid growth to quality development in order to catch up 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). Additionally, in recent years, China has therefore intensified its CSR development and sustainability practices (Graafland and Zhang 2014) as well as invested in green initiatives such as the "Green Wall", among others, to pivot toward a more sustainable economy (Li et al. 2019). Given China's economic significance and the government's push for sustainable business practices, the Chinese context offers a unique and compelling setting for this study.

Fourth, it is increasingly being recognized that sustainable business practices are congruent with the expectations of society (Deegan 2009). However, because the association between CSR and firm performance is not firmly established, there is the potential that management may forego investing in sustainable business practices to meet short-term financial goals (Sewchurran et al. 2019). Therefore, this study is motivated to contribute to business, society, and policymakers by providing evidence that innovative sustainable business strategies, if well marketed, can have a positive impact on numerous aspects of firm performance (Guo and Lu 2021).

Using firm-level data from a sample of 716 listed Chinese firms from 2013 to 2019, we examine the association between CSR and firm performance. We further explore the moderating role of innovation through marketing intensity on the relationship between CSR and firm performance. Our baseline results show that CSR initiatives have a significant positive impact on firm performance measured by ROA and Tobin's Q. We also find that innovation through marketing intensity enhances the relationship between CSR and firm performance. The main results remain robust after several robustness tests, including the use of alternative measures of firm performance and addressing endogeneity concerns through a two-step system Generalized Method of Moments (GMM) approach. Our empirical findings suggest that in China, firms that engage in CSR activities and effectively communicate their commitment to sustainable business practices through marketing reap significant financial benefits from these initiatives. This is because effective communication through marketing helps legitimize the firm's sustainable business strategy and fosters stronger social contracts, which promote customer loyalty and ultimately boost the firm's financial performance.

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 and robustness. Section 5 discusses the findings and concludes the study.

2 | Literature Review and Hypotheses Development

2.1 | CSR and Accounting-Based Financial Performance

CSR is seen as an indicator of organizational effectiveness (Carroll 2008; Hou et al. 2016; Sheehy 2014). Grounded in stakeholder and legitimacy theories, numerous studies suggest that increased engagement in CSR practices enhances a firm's public image, which in turn contributes to improved financial

performance (Al-Dhamari et al. 2022; Bahta et al. 2021; Hasan et al. 2018; Love 2010; Walker et al. 2019; Westlund and Adam 2010), as well as market value (Albuquerque et al. 2019; Bouslah et al. 2013; Choi et al. 2010; Lee and Faff 2009; Luo and Bhattacharya 2006; Oikonomou et al. 2012; Orlitzky and Benjamin 2001; Salama et al. 2011). Thus, a well-established literature exists to infer that a firm's commitment to sustainability practices has a positive outcome for firms.

On the contrary, Barnea and Rubin (2010) suggest that the association between CSR and firm performance is not positive. More specifically, they surmise that management has an incentive to align themselves with sustainable business practices to enhance their reputation. However, this self-serving approach has been shown to fall short of achieving the intended improvements in 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 (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 quantifiable measures (van Beurden and Gössling 2008; Waddock and 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 and Shin 2019).

Scholars have examined the relationship between CSR practices and performance in Chinese firms (e.g., Gao 2009; Wang et al. 2015; Zhu et al. 2014; Yang et al. 2019). 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) find 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. (2015) argue that this may be because market participants are skeptical about the reliability of firms' CSR information and firms have incentives to greenwash through CSR practices. Thus, there is some evidence that 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) surmise that stakeholders in China seek information about business ethics and CSR. Moreover, Chinese stakeholders are more likely to support firms with robust CSR performance. By utilizing the Hexun database, Yang et al. (2019) report 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, signaling, legitimacy, and resource dependence theories have found that CSR has a positive impact on accounting-based performance such as ROA and ROE (Chen and Wang 2011; Dakhli 2021; Jia 2020; Qu 2009; Wang and Qian 2011; Xiong et al. 2016). Based on the foregoing, we hypothesize 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. While some scholars report negative results (Kao et al. 2018; Lee et al. 2013; Lee and Park 2009; Ruan and Liu 2021), others report positive effects (Hu et al. 2018; Liu and Zhang 2017; Ning et al. 2017; Zhang and Cui 2020). Based on agency theory, Kao et al. (2018) found that as an image management strategy, CSR may be misused by management for reputational purposes. When examining specific industries, the outcomes of CSR engagement are likely to vary across sectors. In this context, 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. Ning et al. (2017) found that more responsible behavior makes it easier for firms to acquire intangible assets, which can strengthen their market-based performance in the future.

In sum, we argue that a firm's engagement in CSR activities will send a positive signal to stakeholders in line with signaling theory, which will lead to an increase in market performance. Thus, we hypothesize the following:

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 (Tang et al. 2012; Bocquet et al. 2017). 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 and 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. According to Servaes and Tamayo (2013), marketing enhances a firm's information environment, which can indirectly increase the visibility of its CSR efforts. 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 toward the firm. 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 and 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, signaling 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 signaling 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. In this regard, 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 (e.g., Pomering and Johnson 2009; Hsu 2012).

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 (Hsu 2012). Furthermore, advertising can help bridge the gap between CSR activities and financial outcomes by highlighting the tangible benefits of CSR (Yim et al. 2019), 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 relationship, and ultimately achieve superior financial outcomes.

Hypothesize these arguments, we hypothesize the following:

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 and 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. The year 2013 is selected as the starting point, as CSR data became more consistently available in the Hexun database from that period onward. We select 2019 as the final year due to the intervening effect of the Covid pandemic on financial performance. The initial sample consisted of 4732 companies 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) 3546 of firms were excluded due to no available data in Hexun (2720); (4) and 826 firms were excluded as no data related to these firms are available on CSMAR database. After the screening process, the final sample consisted of 2735 firm-year observations from 716 firms have been employed in this research. Panel A in Table 1 presents the sample selection procedures and Panel B shows the sample distribution by industry classifications.

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 Assets (ROA) as the accounting-based measure and Tobin's Q as the market-based indicator. Unlike prior research, which often relies on either accounting-based or market-based measures, our study incorporates both accounting-based and market-based measures to provide a more comprehensive view of firm performance. ROA reflects short-term 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 and Chung 2018). For robustness checks, we employ earnings per share (EPS) and return on equity (ROE) as alternative measures of performance.

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
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**

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**

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. Table A1 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.

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 (DUAL)	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

Note: This table provides the description for all the variables employed in this study.

3.2.3 | Marketing Intensity

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 and Hulland 2013). Therefore, in this study, marketing Intensity (MI) is measured as the ratio of selling, general and administrative expenses (SG&A) to sales. We utilize 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 (FSIZE) 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 and Roberts 2007; Ruan and Liu 2021). Leverage (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 and Vincent 2023). Sales growth (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 and Roth 2000). The number of board meetings (BMT) is measured as the total number of board meetings held during the fiscal year. Board independence (BIND) expressed as a percentage of independent directors to total number of members on the board. CEO-chair duality (DUAL) 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:

$$
\begin{aligned}
FP_{i,t} &= \alpha + \beta \times CSR_{i,t} + Firm-level\ Controls_{i,t} + YearFE \\
&\quad + IndustryFE + FirmFE + \varepsilon_{i,t}
\end{aligned} \tag{1}
$$

To further examine the moderating role of management innovation through marketing intensity on the relationship between CSR and firm performance, we employ the following regression model:

$$
\begin{aligned}
FP_{i,t} &= \alpha + \beta_1 \times CSR_{i,t} + \beta_2 \times MI_{i,t} + \beta_3 \times CSR_{i,t} \times MI_{i,t} \\
&\quad + Firm-level\ Controls_{i,t} + YearFE + + IndustryFE \\
&\quad + FirmFE + \varepsilon_{i,t}
\end{aligned} \tag{2}
$$

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 and Ausloos 2021; Lin et al. 2006; Vizcaíno and 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*, *DUAL, 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. Variable descriptions are provided 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.

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, indicating substantial variation in CSR practices 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 on marketing while others spend at most 18.4% of their sales revenue on marketing.

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

TABLE 3 | Descriptive statistics.

Variable	Obs.	Mean	Standard deviation	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.

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 the 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 DUAL 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.

4 | Results

4.1 | Baseline Results

This section presents the results of the panel data regression analysis based on Model 1. Both fixed effects (FE) and random effects (RE) estimation techniques were considered. To identify the appropriate model, the Hausman specification test (Hausman 1978) was employed. The test rejected the null hypothesis of random effects at the 1% significance level, indicating that the fixed effects model is the more appropriate and consistent estimator for our analysis. Table 5 reports the results of the baseline model. Robust standard errors clustered at the firm level are used to address 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 signaling 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

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

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

TABLE 5 | The direct effect of CSR on firm performance.

Variables	Pred. sign	Model 1 ROA	Model 2 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***

Note: 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.
***$p < 0.01$.
**$p < 0.05$.
*$p < 0.1$.

help differentiate the firm from competitors and foster a favorable 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 and 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 the 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 and 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 associated costs of debt financing outweigh the potential benefits, leading to a decline 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 and Jang 2007).

The results also highlight that corporate governance mechanisms, such as the number of board meetings (BMT), board independence (BIND), and the proportion of shares owned by the largest shareholders (SRSL), are positively related to firm performance, as measured by ROA and Tobin's Q. These corporate governance mechanisms play a crucial role in enhancing the effectiveness of CSR initiatives, which in turn boost financial outcomes. Regular board meetings foster active governance and ensure that CSR strategies are well-aligned with the firm's long-term goals. Board independence supports objective decision-making and encourages credible and impactful CSR actions that improve stakeholder trust and company reputation. Moreover, large shareholders, with their significant influence, may advocate for CSR practices that align with long-term profitability, driving resource allocation and strategy that enhance both social and financial performance. Together, these governance characteristics ensure that CSR is strategically integrated into the firm's operations, leading to enhanced firm performance.

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 maximizing the benefits of CSR.

From the lens of legitimacy theory, these results suggest that marketing efforts help firms strengthen their social legitimacy by

TABLE 6 | The moderating role of marketing intensity on the CSR–firm performance relationship.

Variables	Pred. sign	Model 1 ROA	Model 2 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***

Note: This table presents the result of the moderating role of 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.
***$p < 0.01$.
**$p < 0.05$.
*$p < 0.1$.

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 business and firm performance. In essence, marketing amplifies the legitimacy that CSR confers, translating into better financial outcomes.

Using signaling 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 signaling 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; 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.

4.3 | Robustness Check

4.3.1 | Alternative Measures for Performance

We test the robustness of our baseline results by employing alternative proxies for firm performance. Specifically, we use earnings per share (EPS) and return on equity (ROE) as alternative performance measures. Results are presented in Table 7. Our findings show that CSR has a 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 a positive and significant impact on ROE at the 1% level. We also find that the interaction term and ROE are positive and statistically significant at the 1% level. These findings corroborate our baseline results and support our hypothesis that CSR has a 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.

4.3.2 | Two-Step System GMM

We employ the generalized method of moments (GMM) estimator developed by Arellano and Bond (1991) along with its later refinements (Roodman 2009) to address endogeneity concerns. The GMM estimator remains consistent in the presence of unobservable heterogeneity across sections, especially as the number of cross-sections (*N*) increases asymptotically.

TABLE 7 | Alternative measures of firm performance.

Variables	Pred. sign	Model 1 EPS	Model 2 EPS	Model 3 ROE	Model 4 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***

Note: This table presents the result of the direct effect and moderating role of marketing intensity on alternatives firm performance measures (EPS and ROE). All models are estimated using FE. Robust standard errors in parentheses.

***$p < 0.01$.
**$p < 0.05$.
*$p < 0.1$.

Our results of this analysis are presented in Table 8. Overall, the results support our main findings, indicating that marketing intensity continues to moderate the relationship between CSR and firm performance, even after addressing endogeneity concerns.

5 | Discussion and Conclusion

This study investigates the link between corporate social responsibility (CSR) and firm performance using data from 716 Chinese companies listed on the Shanghai and Shenzhen Stock Exchanges between 2013 and 2019. It also explores how management innovation through marketing intensity affects the relationship between CSR and financial performance. The findings reveal a positive and statistically significant impact of CSR on financial performance. Furthermore, the results suggest that firms with higher marketing intensity derive greater financial benefits from their CSR initiatives.

The study makes several contributions. First, we contribute to the ongoing debate on the positive impact of CSR and sustainable business practices on firm financial performance. Firms that integrate sustainability into business practices are recognized as fulfilling the expectations of stakeholders (Delmas and Pekovic 2018; Larson 2000). Moreover, many suggest that sustainable innovation and firm performance are 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. Our results

TABLE 8 | Two-step system GMM.

Variables	Pred. sign	Model 1 ROA	Model 2 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) p		0.000	0.000
AR (2) p		0.781	0.624
Hansen p		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
Chi^2 p		0.000	0.000

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

reveal that marketing intensity has the potential to legitimize sustainability practices in the eyes of stakeholders, thereby enhancing the positive impact of CSR on firms' financial performance. The association between CSR and firm performance is considered to be misspecified in the extant literature (Aguinis and Glavas 2012; Cheng et al. 2014; Servaes and 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 the firm is fundamental to develop public trust and long-term business success (Deegan 2009; Ruland and Lindblom 1994). Based on this premise, Servaes and Tamayo (2013) suggest that marketing intensity may be utilized to influence societal stakeholders. Our findings suggest that marketing intensity has the potential to legitimize 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 utilize an emerging economy sample to provide evidence of an empirical association between sustainable innovations and firm performance (Gërguri-Rashiti et al. 2017; Jaiswal and Zane 2022). We utilize a Chinese sample because China is the world's largest emerging economy and the highest emitter of CO_2 (World Bank 2024; Yu et al. 2020) and provide evidence from an underexplored setting. 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 and Lu 2021). We provide evidence that the interaction between CSR and marketing intensity has an incrementally positive effect on numerous forms of firm performance (ROA, Tobin's Q, EPS and ROA).

The findings of this study have several practical and policy implications for policy makers and firms. For firms and managers, the findings reveal that firms benefit financially from CSR initiatives, particularly when these efforts are supported by strong marketing intensity. Rather than viewing CSR as a peripheral or purely ethical endeavor, firms should integrate it strategically into their core operations and marketing strategies. By doing so, they can enhance stakeholder engagement, improve brand perception, and ultimately boost financial performance. Managers are therefore encouraged to allocate resources toward marketing that highlights their CSR efforts to fully realize the potential financial gains.

Furthermore, the results underscore the need for internal capacity building within firms. Managers should ensure that

both CSR and marketing teams are adequately resourced and aligned. Investing in management training that emphasizes the synergistic effects of CSR and marketing can equip decision-makers with the skills needed to design and implement integrated strategies. Such alignment not only enhances the impact of CSR initiatives but also contributes to long-term competitiveness and profitability.

For policymakers, these findings carry important implications on how to promote responsible business conduct. Governments and regulatory bodies could consider developing policies or incentive structures and instruments that encourage firms to innovate in how they implement and communicate CSR. Tools such as tax incentives, subsidies, or public recognition programs for companies demonstrating effective CSR-marketing integration could foster a culture of sustainability while advancing national social and environmental objectives.

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 is symbolic and permissible for greenwashing (Cho et al. 2014; Michelon et al. 2015; Moneva et al. 2006; Patten and 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, which 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 has 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.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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Appendix A: See Table A1

TABLE A1 | The components of Hexun CSR scoring mechanism.

First-class indicators	Second-class indicators	Third-class indicators
Shareholder responsibility (A) weight ratio: 30%	Profits (A1) 10%	ROE (2%)
		ROA (2%)
		OPE (2%)
		Cost margin (1%)
		Earnings per share (EPS) (2%)
		Retained earnings per share (1%)
	Debt situation (A2) 3%	Quick ratio (0.5%)
		Liquidity ratio (0.5%)
		Cash ratio (0.5%)
		Shareholders' equity ratio (0.5%)
		Asset-liability ratio (1%)
	Return (A3) 8%	Dividend capital ratio (2%)
		Dividend yield (3%)
		Bonus share allocation ratio of profits (3%)
	Credit (A4) 5%	Exchange of the company and the number of responsible person penalties (5%)
	Innovation (A5) 4%	Product development expenditure (1%)
		Concept of technological innovation (1%)
		The number of items of technological innovation (2%)
Employee responsibilities (B) weight ratio: 15% weight: 10% in the consumer sector	Performance (B1) 5%	Per capita income of workers (4%) (3%)
		Staff training (1%) (1%)
	Security (B2) 5%	Security check (2%) (1%)
		Safety training (3%) (2%)
	Caring for employees (B3) 5%	Condolence awareness (1%) (1%)
		Condolences to the people (2%) (1%)
		Condolence payments (2%) (1%)
Supplier, customer, and consumers responsibility (C) weight ratio: 15% weight: 20% in the consumer sector	Product quality (C1) 7%	Quality management awareness (3%) (5%)
		Quality Management System Certificate (4%) (4%)
	Service (C2) 3%	Customer satisfaction survey (3%) (4%)
	Mutual good faith (C3) 5%	Vendor fair competition (3%) (4%)
		Anti-bribery training (2%) (3%)
Environmental responsibility (D) weight ratio: 20% weight: 30% in the manufacturing sector weight: 10% in the service sector	Environmental governance (D1) 20%	Environmental awareness (2%) (4%) (2%)
		Environmental management system certification (3%) (5%) (2%)
		Environmental investment amount (5%) (7%) (2%)
		Number of types of sewage (5%) (7%) (2%)
		Number of types of energy conservation (5%) (7%) (2%)
Public responsibility (E) weight ratio: 20% weight: 10% in the manufacturing sector weight: 30% in the service sector	Contribution value (E1) 20%	Tax (10%) (5%) (15%)
		Donation amount (10%) (5%) (15%)

Note: Hexun CSR scoring database.