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Corporate Social Responsibility and Financial Performance in the Chinese Pharmaceutical Sector: The Roles of Technological Innovation and Media Coverage

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Abstract: The pharmaceutical industry has been developing rapidly in recent years, and concerns have been widely raised about social responsibility for the safety of people's lives. This research aims to investigate the impact of CSR on CFP of listed pharmaceutical companies in China. This study was based on the data of pharmaceutical listed companies from 2010 to 2020 as a sample and built regression models for the effects of pharmaceutical corporate social responsibility (CSR) on corporate financial performance (CFP) based on the indirect effects of technological innovation and media coverage. The two-way fixed effect method, the systematic generalized method of moments estimation (SYS-GMM), and the Bootstrap method are adopted for the regression analysis of the model. The research found that (1) CSR positively affected CFP; (2) CSR positively affected technological innovation, while technological innovation partially mediated between CSR and CFP; and (3) both positive and negative media coverage negatively moderated the relationship between CSR and CFP as well as the relationship between CSR and technological innovation. In addition, both positive and negative media coverage negatively moderates the mediation path of "CSR–corporate innovation–CFP".



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Keywords: corporate social responsibility; corporate financial performance; technological innovation; media coverage; Chinese pharmaceutical industry

1. Introduction

The increasing importance of CSR for corporate and social development has caused a significant research topic in the field of management and accounting [1,2]. CSR has been adopted to create conditions for sustainable growth for the long-term development of firms [3,4] as well as to enhance financial, environmental, and social performance [5,6]. Corporate managers who actively implement CSR strategies can alleviate external pressures [7], mitigate adverse impacts on the environment, and improve CSR performance [8]. CSR has been adopted as part of a corporate business strategy [9,10]. However, CSR capitalization may also negatively affect corporate profitability [11,12]. There is still no consistent conclusion on the relationship between CSR and CFP in current research [13,14].

Innovation is considered a way for CSR to balance financial performance and social performance, and in turn achieve the goal of sustainable corporate development [15]. Corporations integrate CSR into their corporate strategies with the goal of sustainable development as an engine of innovation and economic growth [16]. CSR activities are recognized as long-term investment and innovation drivers, creating competitive advantage and increasing financial performance for companies [17]. CSR, as a strategy for business

operations, is a driver for firms to pursue green innovation [18], which increases firms' innovation performance [19,20].

The media has a significant impact on public opinion in the context of CSR [21]. The media reduces the degree of information asymmetry between the public and firms [22,23] and improves public confidence. Repeated media coverage helps build a better corporate reputation and financial performance [24]. Cahan and Chen [25] suggested that CSR engagement can increase media coverage and create a corporate media image. A good corporate image prevents the loss of corporate reputation due to negative public comments. There is a strong relationship between corporate image and CSR [17], and CSR significantly affects corporate image [26]. The media's role in public opinion monitoring is conducive to enhancing the efficiency of firms' technological innovations [27,28]. However, the more media attention a company receives, the greater external pressure it is subjected to [29]. False reports can negatively affect corporate reputation [30]. But media coverage is a double-edged sword [31], and the complex market environment makes media coverage may only fail to stimulate firms to optimize their management mode, but it could also lead to lower financial performance.

As China's pharmaceutical industry continues to grow rapidly, CSR evolution and its impact on the financial performance of the pharmaceutical industry are becoming more prominent [32], and the social responsibility of pharmaceutical companies is increasingly becoming a central public concern [33]. In recent years, there have also been cases of social irresponsibility in China related to illness, healthcare quality, and occupational injuries [34], and Chinese drug quality and safety also have major problems [35], all of which reveal a lack of CSR among Chinese pharmaceutical companies. The pharmaceutical industry has often been criticized for violating the principle of "doing well economically and doing well ethically" [36]. The question of how pharmaceutical companies can balance social and financial performance is an important reality for pharmaceutical companies.

In summary, this research selects the panel data from 2010 to 2020 and builds regression models of the impact of Chinese pharmaceutical CSR on CFP based on the indirect effects of technological innovation and media coverage and analyzes them by using the two-fixed effects regression method. The purpose of this research is to analyze the impact of pharmaceutical CSR on CFP as well as the indirect role of technological innovation and media coverage in the impact of CSR on CFP to provide a basis for pharmaceutical enterprises to actively fulfill their social responsibility.

2. Literature Review and Hypothesis

2.1. Corporate Social Responsibility and Corporate Financial Performance

American scholar Sheldon (1924) [37] first coined the concept of CSR. From the perspective of sociology, while enterprises are responsible for earning profits for their shareholders, they should also care about people's livelihood, social welfare protection, and ecological construction [38]. From the perspective of economics, the biggest responsibility of enterprises is to continuously pursue profit maximization within the legal limits [39].

Several scholars have studied the relationship between CSR and CFP, but the idea that CSR can lead to better financial performance is still controversial [40]. Based on the stakeholder perspective, the fulfillment of corporate social responsibility is the responsibility of companies to various stakeholders, including shareholders, employees, consumers, suppliers, government, and other social groups [41]. Stakeholder involvement in CSR activities can help companies optimize their relationships with stakeholders [42,43]. By undertaking CSR, enterprises gain social legitimacy while benefiting their financial performance [44]. Corporations pay taxes in law and participate in public welfare donations, which enables them to establish a positive image [45] and is conducive to obtaining govern-

ment support [32]. Corporations provide employees with a good working environment, perfect compensation and benefits, which are conducive to improving the effectiveness of employees' work [46]. Enterprises actively enhance customer satisfaction, which is conducive to improving business performance [47]. Corporations actively fulfill their responsibilities to investors, which can attract more investment and ensure the stability of the enterprise's operating capital [32]. This indirectly contributes to the enhancement of the enterprise's financial performance. Yang et al. [48] took Chinese pharmaceutical companies as a research sample, and, respectively, from the performance of five dimensions of CSR, such as shareholders, employees, customers and suppliers, environmental practices, and society, and found that all dimensions of CSR are positively correlated with CFP. Li et al. [14] found a positive correlation between CSR and CFP by using a panel of listed companies in China.

From the perspective of the resource-based view (RBV), CSR can help companies obtain necessary tangible or intangible resources to form long-term competitive advantages [49]. The fulfillment of CSR can bring moral capital to the company and reduce the negative impact on the value of the company when negative events occur, thus reducing the risk of the company [50]. At the same time, CSR practices can increase consumers' willingness to buy and sales revenue [47], which contributes to corporate financial performance. According to the "social impact hypothesis", companies that satisfy social responsibility attract more customers, gain higher employee identification and sense of belonging, leading to improved performance [51].

Based on agency theory, corporate investment in social responsibility reduces corporate risk [52], effectively reduces agency costs, and CSR creates risk management benefits for the company [53], which also enhances corporate performance. Based on the risk management perspective, CSR can also be viewed as a tool to protect the value of corporate reputation [54].

H1. *The fulfillment of CSR by Chinese pharmaceutical companies can promote CFP improvement.*

2.2. Mediating Role of Technological Innovation

Technological innovation as a prerequisite for economic growth is conducive to corporate performance [55,56]. Implementing CSR can lead to opportunities, competitive advantages, and innovation [57]. CSR may affect innovation performance directly rather than indirectly [58]. According to the stakeholder theory, the responsibility of the corporation to various stakeholders can attract more resources to support the technological innovation of the corporation [59]. Corporations protect employees' salaries and pay attention to employees' training of vocational skills training to stimulate their innovation potential [60] and improve the business's financial performance [61]. CSR can influence the behavior of suppliers [62] and make full use of the advanced technology owned by the suppliers to develop new products. Corporations actively improve the information asymmetry between managers and investors [63], reduce the agency costs between managers and potential investors, and invest more money in the R&D activities of the corporation. Enterprises focus on producing green products and developing green technology, which is conducive to obtaining support from the government and universities [56] and promotes the innovation ability and sales volume of enterprises [64]. Wang et al. [65] studied Chinese hi-tech enterprises and found that both external and internal CSR promotes corporate innovation performance.

Based on the RBV, the fulfillment of CSR promotes the development of intangible assets of the firm while enabling the firm to gain a sustained competitive advantage [66]. The essence of a firm's competitive advantage comes from heterogeneous resources [67].

Technological innovation is the main way for firms to increase their heterogeneous resources and is one of the key factors influencing financial performance. Technological innovation cannot be separated from excellent talents, and technological talents are more concerned about corporate social responsibility [68], and corporate social responsibility can help companies attract more technological talents [69].

Cegarra-Navarro et al. [70] found that innovation factors play a mediating role in the relationship between CSR and performance. Moreover, CSR showed a positive correlation between innovation and organizational performance for all group companies [71]. Bahta [72] found that CSR has a significant positive effect on financial performance and innovation capability, and innovation capability plays a partial mediating effect between CSR and firm performance. Therefore, innovation is a necessary condition for CSR practices to contribute to firm performance [61].

H2. *The fulfillment of CSR by Chinese pharmaceutical companies can promote corporate technological innovation.*

H3. *Technological innovation mediates the relationship between CSR and CFP of Chinese pharmaceutical companies.*

2.3. Moderating Role of Media Coverage

According to signaling theory, the media acts as an intermediary during information dissemination, that is, when the media releases information favorable to the company, positive evaluations from the public or potential investors increase [73]. Lu et al. [24], based on Chinese firms as a research sample, found that media coverage is more favorable to firms with a higher social responsibility index [74], and that companies use media coverage as a tool to disclose their social responsibility [75]. Chen et al. [76] found that positive coverage played a more important role in promoting green innovation among Chinese industrial firms by dividing the tone of media coverage. Shilei et al. [28] found that increased positive coverage of Chinese listed firms had a significant effect on corporate innovation, while negative coverage limited corporate innovation. However, the media also magnifies the impact of CSR behaviors, and firms prefer to take on too much social responsibility to maintain a good image [38], which increases the cost of taking responsibility and enhances the operational pressure on firms, leading to a decline in financial performance and restricting firms' investment in innovation [77]. Liang et al. [78] studied the energy companies in China and found that negative media reports weaken the promotion of technological innovation on environmental performance, revealing the "dark side" of media reports on the environmental management of energy companies.

Media coverage has also been closely related to reputation mechanisms [79]. Corporate reputation theory suggests that corporate reputation is a valuable intangible asset [80] that allows a company to achieve sustained profitability. Corporations use CSR to build reputational capital and promote financial performance through reputation [72]. However, irresponsible positive coverage of false disclosure, exaggeration, or false propaganda of greenwashing behavior, although it improves corporate reputation in a short period, it will eventually lead to corporate image and reputation degradation [81] and ultimately damage the company's financial performance [82]. Negative press coverage also causes damage to corporate reputation [83], and firms spend money on public relations and paying fines to redeem their corporate image, which leads to a decline in financial performance.

According to institutional theory, the media, as a key component of the institutional environment, conveys social norms to firms [84]. The supervision effect generated by media coverage has a deterrent effect on managers [85], which can solve the problem of managers

neglecting their responsibilities for personal interests [86]. The external governance role of the media on corporations influences corporate technological innovation [78,87]. The corporate governance hypothesis suggests that the media, as a disseminator of information, enhances the transparency of market information and corporate information, and media coverage increases investors' attention to corporate information [88,89]. However, negative coverage leads to external public opinion pressure [27], which restricts firms' innovation [28]. Because the media amplifies the negative impact of R&D failures, leading to firms becoming the target of public criticism [85], firm managers will adopt a cautious attitude towards innovative behavior. Negative media coverage will make firms more inclined to improve short-term performance rather than long-term performance related to firm innovation [86].

H4a. Positive media coverage positively moderates the influence of CSR on CFP in Chinese pharmaceutical companies.

H4b. Positive media coverage negatively moderates the influence of CSR on CFP in Chinese pharmaceutical companies.

H4c. Negative media coverage positively moderates the effect of CSR on CFP in Chinese pharmaceutical companies.

H4d. Negative media coverage negatively moderates the influence of CSR on CFP in Chinese pharmaceutical companies.

H5a. Positive media coverage positively moderates the effect of CSR on technological innovation in Chinese pharmaceutical companies.

H5b. Positive media coverage negatively moderates the effect of CSR on technological innovation in Chinese pharmaceutical companies.

H5c. Negative media coverage positively moderates the effect of CSR on technological innovation in Chinese pharmaceutical companies.

H5d. Negative media coverage negatively moderates the effect of CSR on technological innovation in Chinese pharmaceutical companies.

The conceptual framework of this research is shown in Figure 1.

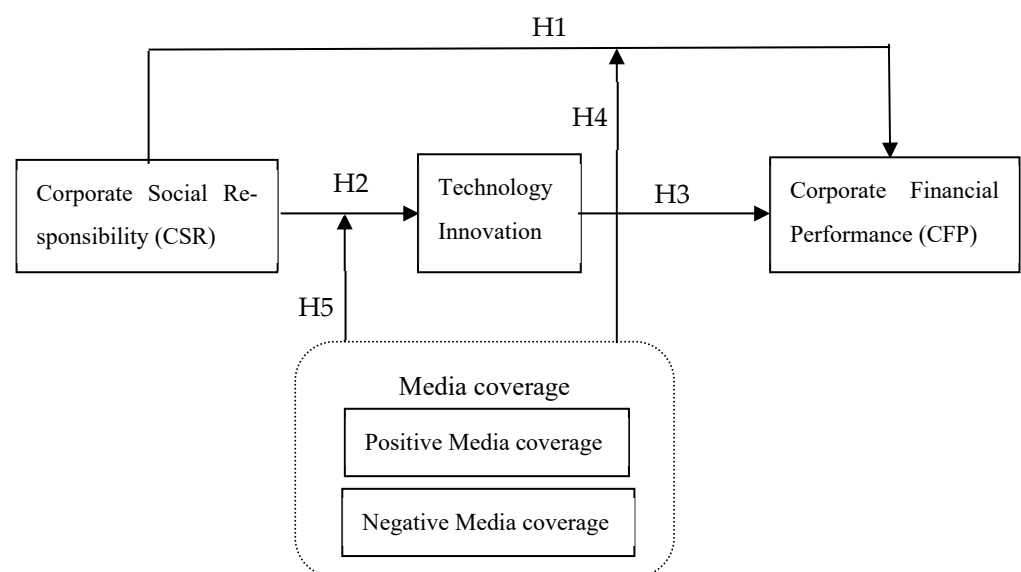


Figure 1. The research conceptual framework.

3. Methodology

3.1. Sample and Data Sources

The research is based on listed pharmaceutical companies in China. The pharmaceutical corporations listed on the Shenzhen Stock Exchange and Shanghai Stock Exchange in China from 2010 to 2020 were used as samples. And samples were screened according to the following criteria: (1) excluding the samples of ST and *ST companies that experienced special treatment during the study period; (2) excluding the samples of companies that no longer belong to the pharmaceutical industry due to industry changes during the study period; (3) excluding the companies with fewer than five years of sample observations during the study period, to ensure the temporal nature of the samples; (4) excluding the companies with unavailable data; and (5) all variables are Winsorized at 1% level to avoid the effect of extreme values on the results of the study. The screening resulted in 128 companies and 1367 observation samples.

Relevant financial data sources mainly include annual reports, China Stock Market and Accounting Research Database (CSMAR), and China Research Database (CNRDS). The CSR data are obtained from Hexun.com [32,34], which has constructed a professional evaluation system of listed companies' social responsibility reports, which uses the social responsibility reports and annual reports published by the companies as the data source. The evaluation system is divided into five categories: shareholder responsibility, employee responsibility, supplier, customer, and consumer rights and responsibilities, environmental responsibility, and social responsibility, with 13 secondary indicators and 37 tertiary indicators, which can reflect corporate social responsibility more comprehensively and objectively. Media-related data, based on Shilei et al.'s [28] approach, were selected from the CNRDS [78], which contains more than 600 newspapers and media organizations and can ensure the authority, comprehensiveness, and easy accessibility of media data. The relevant data were statistically processed with Excel and Stata17.

3.2. Measures

3.2.1. Dependent Variable

Measuring the financial performance of enterprises has two main types of indicators: market return indicators and accounting indicators. Accounting indicators are mainly derived from the enterprise's historical data, and the common measurement indicators are return on assets (ROA) [90], return on net assets (ROE) [73], and operating profit margin [91]. In this research, ROA is used as a variable to measure financial performance, and operating profit margin is selected as a replacement variable for ROA in the robustness test for analysis.

3.2.2. Independent Variable

The methods for evaluating the level of CSR include the content analysis method, the reputation index method, and the KLD index method. Considering the lack of an authoritative database similar to the KLD index in China and the subjective factors of the content analysis and reputation index methods, this paper chooses "Hexun.com—CSR data" to measure the level of social responsibility [28,92].

3.2.3. Mediator Variable

Innovative performance should reflect not only the novelty or scientific quality of the product, but also the marketability and value of the product. However, the number of invention patents and the sales revenue of new products can only reflect the innovation performance reflecting individual patents or new products; it cannot reflect the overall innovation performance of a company. In addition, manufacturing enterprises should

be innovation-oriented, and they widely apply new patents and technologies to produce innovative products mainly with high R&D intensity and high innovation [93]. Furthermore, these products are mostly intangible assets, which can bring continuous profit to the company [94]. The return on intangible assets can explain to some extent the innovation performance of firms, representing both the funds that can be invested in innovation projects and managers' decisions on investment and innovation strategies [95]. Therefore, this article uses the return on intangible assets (net profit/net intangible assets) as a measure of innovation performance, which provides a comprehensive picture of the novelty of the innovation and the value of the new product in the market [77].

3.2.4. Moderator Variable

Commonly used methods to measure media coverage include the dummy variable method and logging the number of news reports. The former quantitative method is more intuitive, but it will have an impact on the regression results, and most experts and scholars use the latter [96,97]. The latter is also chosen in this research, and the number of news reports is logarithmically processed as a measure of media coverage [28,97].

3.2.5. Control Variable

To adequately measure the relationship between CSR, technological innovation, and firm performance, this research controls important factors that influence firms' technological innovation and financial performance. The specific control variable indicators are as follows: firm age (Age) may affect firm technological innovation [20] and firm performance [92], and it is measured as the natural logarithm of the sample year minus the year the company was founded [31]; firm size (Size) is measured by the natural logarithm of firms' total asset [14], and resource-rich firms are more likely to invest in CSR to contribute to increased CFP [98]; asset–liability ratio (Lev), cash flow ratio (CFO), sales growth rate (Growth), and intangible asset ratio (Intan); the number of staff (Staff) may affect the effectiveness of CSR and technological innovation, which in turn affects financial performance [99], as measured by the natural logarithm of the total number of employees in a firm [28], avoiding the effect of economies of scale. Variable details are shown in Table 1.

3.3. Model Building

This study uses the methodology proposed by Baron and Kenny (1986) [100] to test the mediating effect of technological innovation and the moderating effect of media coverage, respectively. The specific models are as follows:

$$ROA_{it} = \alpha_0 + \alpha_1 CSR_{it} + \alpha_2 \sum Controls_{it} + \mu_i + \gamma_t + \varepsilon_{it} \quad (1)$$

$$Inn_{it} = \beta_0 + \beta_1 CSR_{it} + \beta_2 \sum Controls_{it} + \mu_i + \gamma_t + \varepsilon_{it} \quad (2)$$

$$ROA_{it} = \gamma_0 + \gamma_1 CSR_{it} + \gamma_2 Inn_{it} + \gamma_3 \sum Controls_{it} + \mu_i + \gamma_t + \varepsilon_{it} \quad (3)$$

$$ROA_{it} = \theta_0 + \theta_1 CSR_{it} + \theta_2 Med_{it} + \theta_3 CSR_{it} \times Med_{it} + \theta_4 \sum Controls_{it} + \mu_i + \gamma_t + \varepsilon_{it} \quad (4)$$

$$Inn_{it} = \chi_0 + \chi_1 CSR_{it} + \chi_2 Med_{it} + \chi_3 CSR_{it} \times Med_{it} + \chi_4 \sum Controls_{it} + \mu_i + \gamma_t + \varepsilon_{it} \quad (5)$$

$$ROA_{it} = \partial_0 + \partial_1 CSR_{it} + \partial_2 Med_{it} + \partial_3 CSR_{it} \times Med_{it} + \partial_4 Inn_{it} + \partial_5 \sum Controls_{it} + \mu_i + \gamma_t + \varepsilon_{it} \quad (6)$$

in which ROA represent corporate financial performance; CSR represent corporate social responsibility; Inn represent technological innovation; Med represent media coverage, which is verified by positive media coverage (Med1) and negative media coverage (Med2), respectively; μ_i is individual fixed effect; γ_t is time fixed effect; ε is a random interference term; and Controls are control variables, including firm age, firm size, firm leverage, cash flow ratio, sales growth rate, intangible assets ratio, and number of staff.

Table 1. Variable settings and definitions.

Variable Type	Variables	Symbol	Definition
Dependent variable	Corporate Financial Performance	CFP	Net profit/total assets
Independent variable	Corporate Social Responsibility	CSR	CSR score from Hexun CSR database $\times 0.01$
Mediator variable	Technology Innovation	Inn	Net profit/net intangible assets
Moderator variable	Positive media coverage	Med1	The natural logarithm of the number of positive newspaper reports about the enterprise in the CFND database plus 1.
	Negative media coverage	Med2	The natural logarithm of the number of negative newspaper reports about the enterprise in the CFND database plus 1.
Control variable	Firm age	Age	The natural logarithm of the sample year minus the year the company was founded
	Firm size	Size	The natural logarithm of the book value of total assets
	Firm leverage	Lev	Ratio of debt to firm assets in book value
	Cash flow ratio	CFO	Net cash flows from operating activities of enterprises/total assets
	Sales growth rate	Growth	(Sales revenue for the current year- Sales revenue for the previous year)/Sales revenue for the previous year
	Intangible assets ratio	Intan	Net intangible assets/total assets
	Number of staff	Staff	Natural logarithm of the total number of staff in the company

4. Empirical Results

4.1. Statistics Description

Table 2 reports the descriptive statistics of the sample. The mean value of ROA is 0.070, indicating that the average asset utilization efficiency of Chinese pharmaceutical listed companies is 7%. The mean value of CSR is 0.274, with a range of values from -0.032 to 0.762 . The CSR scores are not very high, which shows that Chinese pharmaceutical companies still ignore the importance of CSR. The standard deviation of Inn is 3.151, indicating that there is a great difference in the innovation level of the sample companies. The values of Med1 and Med2 range from 0 to 6.32 and 0 to 5.521, respectively, reflecting that there is a significant difference in the attention of media reports to the sample companies. The remaining control variables have reasonable values and uniform overall distribution, which satisfy the requirements of regression model estimation. Among the remaining control variables, the average Lev is 0.319, the average CFO is 0.063, the average Growth is 0.155, and the average Intan is 0.051, which are reasonable values with an overall uniform distribution and meet the requirements of regression model estimation.

Table 2. Statistical description of all variables.

Variables	Obs	Mean	SD	Min	Max
ROA	1367	0.070	0.0657	-0.139	0.252
CSR	1367	0.274	0.157	-0.032	0.762
Inn	1367	2.238	3.151	-3.715	17.210
Med1	1367	3.039	1.183	0	6.324
Med2	1367	2.311	1.168	0	5.521
Age	1367	2.802	0.353	1.609	3.367
Size	1367	22.00	0.923	19.980	24.290
Lev	1367	0.319	0.182	0.030	0.817
CFO	1367	0.063	0.061	-0.112	0.230
Growth	1367	0.155	0.272	-0.425	1.507
Intan	1367	0.051	0.036	0.003	0.200
Staff	1367	7.759	0.980	5.659	9.942

4.2. Correlation Analysis

Table 3 reports the correlation coefficients and significance levels of the variables.

Table 3. Correlations analysis.

	ROA	CSR	Inn	Med1	Med2	Age	Size	Lev	CFO	Growth	Intan	Staff
ROA	1											
CSR	0.486 ***	1										
Inn	0.629 ***	0.300 ***	1									
Med1	0.220 ***	0.311 ***	0.127 ***	1								
Med2	0.201 ***	0.294 ***	0.141 ***	0.807 ***	1							
Age	−0.100 ***	−0.076 ***	0.015	0.073 ***	−0.057 **	1						
Size	0.034	0.149 ***	0.023	0.506 ***	0.348 ***	0.429 ***	1					
Lev	−0.433 ***	−0.202 ***	−0.339 ***	0.134 ***	0.117 ***	0.231 ***	0.267 ***	1				
CFO	0.542 ***	0.253 ***	0.285 ***	0.075 ***	0.043	0.004	0.034	−0.273 ***	1			
Growth	0.290 ***	0.118 ***	0.142 ***	0.107 ***	0.101 ***	−0.123 ***	−0.024	−0.030	0.042	1		
Intan	−0.073 ***	−0.059 **	−0.444 ***	−0.012	0.014	−0.064 **	−0.078 ***	0.091 ***	0.075 ***	−0.019	1	
Staff	0.056 **	0.190 ***	−0.041	0.545 ***	0.429 ***	0.331 ***	0.788 ***	0.333 ***	0.104 ***	−0.032	0.065 **	1

*** $p < 0.01$, ** $p < 0.05$.

The correlation coefficients of ROA with CSR and Inn are 0.486 and 0.629, respectively, both of which are significantly positively correlated at the 1% level, which means that active fulfillment of social responsibility and active innovation of enterprises can contribute to the enhancement of financial performance of enterprises, supporting H1 and H3.

The correlation coefficient of Inn with CSR is 0.300, which is significantly positively correlated at the 1% level, indicating that active fulfillment of corporate social responsibility helps the innovation and development of enterprises, supporting H2.

In terms of control variables, each control variable has a significant correlation at the 1% level with the independent variable or the dependent variable, indicating that the sample selection and model setting are reasonable.

The above is only the preliminary correlation analysis results of the data; to find out whether CSR can have a positive impact on corporate financial performance to ensure the accuracy of the analysis results, this research needs to do further testing and analysis of the data.

4.3. Regression Analysis

In this research, regressions are based on the two-way fixed effects model with panel data, and clustered robust standard errors are used to avoid possible effects of heteroskedasticity and autocorrelation. Tables 4 and 5 report the regression results of CSR on CFP.

H1: The fulfillment of CSR by Chinese pharmaceutical companies significantly affects the growth of CFP. Column (1) in Table 4 shows the regression results of CSR on CFP. The regression coefficient of CSR is 0.1056 ($p < 0.01$), which indicates that there is a significant positive correlation between CSR and CFP and that the fulfillment of CSR by the enterprise can increase the financial performance of the enterprise.

H2: The fulfillment of CSR by Chinese pharmaceutical companies significantly promotes the increase in technological innovation. Column (2) in Table 4 shows the regression results of CSR on technological innovation, and the CSR regression coefficient is 2.2767 ($p < 0.01$), which indicates that the fulfillment of corporate social responsibility can promote the enhancement of technological innovation of enterprises.

H3: Technological innovation plays a partially mediating role in the CSR-CFP relationship of Chinese pharmaceutical companies. The regression results in column (3) in Table 4 show that both CSR ($\beta = 0.0830$, $p < 0.01$) and technological innovation ($\beta = 0.0103$, $p < 0.01$) significantly and positively affect corporate financial performance. Combined with the comparison of columns (1) and (3) in Table 4, it can be seen that the level of significance of CSR does not change with the addition of technological innovation, but the

explanatory power of CSR on ROA decreases from 0.1056 to 0.0830, which is a decrease of 21.4%. According to the test of Baron and Kenny [99] for the mediating effect, technological innovation partially mediates the impact of pharmaceutical CSR on financial performance.

Table 4. Regression results for the mediating effect of technological innovation.

	(1)	(2)	(3)
Variables	ROA	Inn	ROA
CSR	0.1065 *** (6.42)	2.2767 *** (2.90)	0.0830 *** (6.28)
Inn			0.0103 *** (8.38)
Age	−0.0534 * (−1.80)	−0.2183 (−0.13)	−0.0512 * (−1.94)
Size	0.0006 (0.09)	0.3837 (1.09)	−0.0033 (−0.54)
Lev	−0.0942 *** (−4.83)	−3.7963 *** (−4.11)	−0.0551 *** (−3.37)
CFO	0.2695 *** (6.87)	9.3239 *** (4.32)	0.1734 *** (5.92)
Growth	0.0506 *** (9.36)	1.1374 *** (4.11)	0.0389 *** (9.82)
Intan	−0.1176 * (−1.86)	−35.0461 *** (−6.78)	0.2437 *** (4.60)
Staff	−0.0004 (−0.05)	−0.6229 (−1.57)	0.0061 (0.90)
Constant	0.1835 (1.42)	1.3631 (0.17)	0.1695 (1.37)
Observations	1367	1367	1367
Number of id	128	128	128
Company FE	YES	YES	YES
Year FE	YES	YES	YES
R-squared	0.402	0.285	0.591
F	26.74 ***	7.881 ***	45.35 ***

*** $p < 0.01$, * $p < 0.1$.

H4: Positive and negative media coverage both play a negative moderating role in the impact of CSR on CFP fulfillment by Chinese pharmaceutical companies. The moderating effect of media coverage was mainly tested for the significance of the cross-multiplier term. The coefficient of the cross-multiplier term $c_Med1 \times c_CSR$ in column (1) of Table 5 is -0.0364 ($p < 0.01$) and the coefficient of CSR is 0.2363 ($p < 0.01$); they are both significant and of different signs, which indicates that when the number of positive media coverage increases, it weakens the impact of CSR on financial performance. The cross-multiplication term $c_Med2 \times c_CSR$ coefficient in column (4) of Table 5 is -0.0309 ($p < 0.01$), and the CSR coefficient is 0.1973 ($p < 0.01$); they are both significant and of different signs, suggesting that when the number of negative media coverage increases, it weakens the impact of CSR on financial performance. To better understand the results of the interaction terms, this study plots the moderating effects [101]. Figures 2 and 3 show a negative interaction with CSR for positive and negative media coverage, respectively. At higher levels of CSR, lower amounts of media coverage are more likely to promote corporate financial performance, and H4b and H4d are both supported.

Table 5. Regression results for the moderating effect of media coverage.

	(1)	(2)	(3)	(4)	(5)	(6)
Variables	ROA	Inn	ROA	ROA	Inn	ROA
CSR	0.2363 *** (4.55)	7.0527 *** (3.23)	0.1653 *** (3.80)	0.1973 *** (4.61)	6.2489 *** (4.08)	0.1338 *** (3.79)
Inn			0.0101 *** (8.16)			0.0102 *** (8.19)
Med1	0.0136 *** (3.75)	0.6237 *** (3.33)	0.0074 ** (2.19)			

Table 5. Cont.

	(1)	(2)	(3)	(4)	(5)	(6)
Variables	ROA	Inn	ROA	ROA	Inn	ROA
c.Med1#c.CSR	−0.0364 *** (−2.90)	−1.3413 ** (−2.36)	−0.0229 ** (−2.28)			
Med2				0.0094 *** (3.01)	0.5176 *** (3.77)	0.0042 (1.52)
c.Med2#c.CSR				−0.0309 *** (−2.63)	−1.3448 *** (−2.84)	−0.0173 * (−1.81)
Age	−0.0524 * (−1.78)	−0.2044 (−0.12)	−0.0504 * (−1.92)	−0.0487 (−1.65)	−0.0363 (−0.02)	−0.0483 * (−1.83)
Size	−0.0039 (−0.59)	0.1713 (0.48)	−0.0056 (−0.89)	−0.0022 (−0.34)	0.2214 (0.65)	−0.0044 (−0.73)
Lev	−0.0884 *** (−4.50)	−3.5725 *** (−3.86)	−0.0524 *** (−3.22)	−0.0892 *** (−4.60)	−3.5908 *** (−3.91)	−0.0528 *** (−3.25)
CFO	0.2580 *** (6.66)	8.8583 *** (4.05)	0.1687 *** (5.82)	0.2603 *** (6.59)	8.8615 *** (4.09)	0.1703 *** (5.82)
Growth	0.0498 *** (9.40)	1.0966 *** (3.98)	0.0388 *** (9.85)	0.0502 *** (9.40)	1.1218 *** (4.08)	0.0388 *** (9.86)
Intan	−0.1191 * (−1.89)	−35.1029 *** (−6.86)	0.2345 *** (4.44)	−0.1196 * (−1.91)	−35.1107 *** (−6.91)	0.2370 *** (4.46)
Staff	−0.0007 (−0.11)	−0.6487 * (−1.67)	0.0058 (0.89)	−0.0008 (−0.12)	−0.6510 * (−1.67)	0.0058 (0.88)
Constant	0.2353 * (1.85)	4.0936 (0.52)	0.1941 (1.58)	0.2081 (1.64)	3.1565 (0.41)	0.1760 (1.45)
Observations	1367	1367	1367	1367	1367	1367
Number of id	128	128	128	128	128	128
Company FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
R-squared	0.420	0.298	0.597	0.414	0.296	0.594
F	26.93 ***	8.234 ***	43.61 ***	26.17 ***	8.556 ***	44.94 ***

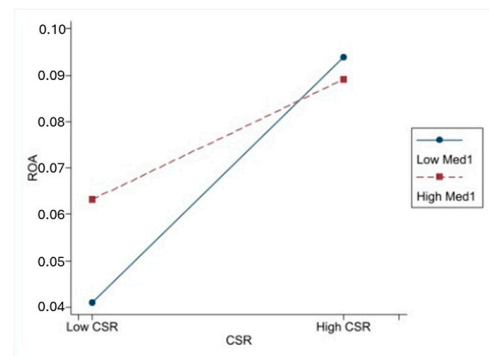
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Figure 2. The interaction of positive media coverage and CSR on CFP.

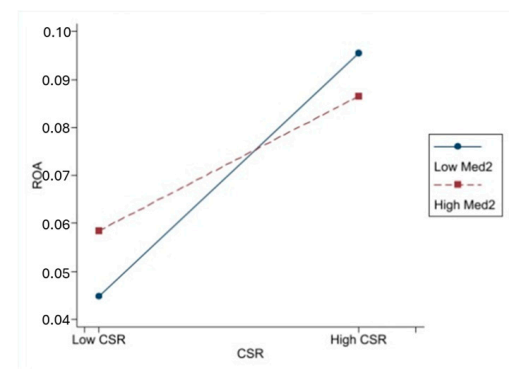


Figure 3. The interaction of negative media coverage and CSR on CFP.

H5: Both positive and negative media coverage inversely moderate the effect of CSR on technological innovation in Chinese pharmaceutical companies. In Table 5, the coefficient of the (2) cross-multiplier term c_Med1*c_CSR is -1.3413 ($p < 0.05$) and the CSR coefficient

is 7.0527 ($p < 0.01$). They are both significant and of different signs, which suggests that when the number of positive media coverage increases, it weakens the impact of CSR on technological innovation. The coefficient of the cross-multiplier term c_Med2*c_CSR in Table 5 (5) is -1.3448 ($p < 0.01$), and the CSR coefficient is 6.2489 ($p < 0.01$). They are both significant and of different signs, indicating that when the number of positive media reports increases, it weakens the impact of CSR on technological innovation. In addition, as shown in Figures 4 and 5, the higher number of positive or negative media coverage promotes the impact of CSR on technological innovation, whereas with an increasing number of media coverage, the promotion of CSR on technological innovation is weakened.

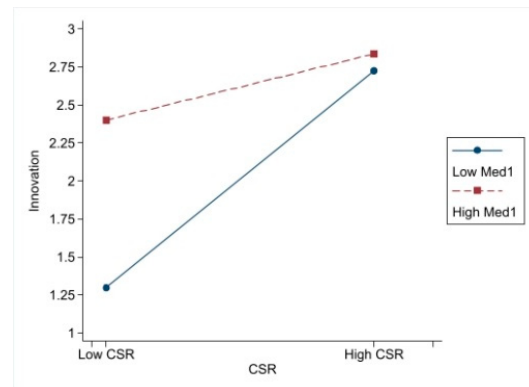


Figure 4. The interaction of positive media coverage and CSR on innovation.

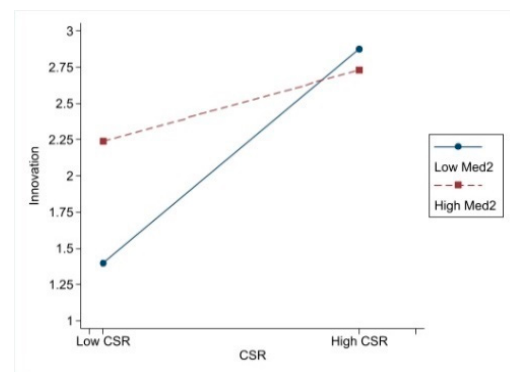


Figure 5. The interaction of negative media coverage and CSR on innovation.

The moderating effect of media coverage on the mediating effect is further analyzed. In Table 5, column (1) c_Med1*c_CSR is significantly negative, while the coefficients of c_Med1*c_CSR (-1.3413 , $p < 0.05$) and Inn (0.0101 , $p < 0.01$) in column (2) are both significant and non-zero and the coefficient of c_Med1*c_CSR in column (3) is -0.0229 ($p < 0.05$). The above can prove that positive media coverage negatively moderates the first half of the mediation path of technological innovation, and it can also be assumed that part of the moderating effect of positive media coverage is through the mediating variable technological innovation. Similarly, if we examine columns (4), (5), and (6) in Table 5, we can also find that negative media coverage also negatively moderates the first half of the mediation path of technological innovation.

4.4. Robustness Tests

4.4.1. Replacing the Dependent Variable

In this research, operating profit margin [91,102] is used to replace ROA for the robustness test, and the results are shown in Table 6. From the regression results, it can be

seen that the correlation coefficient of CSR in column (1) is 0.2566 ($p < 0.01$), which validates that H1 is supported.

Table 6. Regression results for mediating and moderating effects of the alternative dependent variables.

	(1)	(2)	(3)	(4)	(5)	(6)
Variables	Profit	Profit	Profit	Profit	Profit	Profit
CSR	0.2566 *** (5.52)	0.2060 *** (5.33)	0.6950 *** (4.58)	0.5436 *** (4.08)	0.5836 *** (4.60)	0.4486 *** (4.08)
Inn		0.0222 *** (6.94)		0.0215 *** (6.76)		0.0216 *** (6.77)
Med1			0.0342 *** (3.68)	0.0208 ** (2.30)		
c.Med1#c.CSR			−0.1228 *** (−3.46)	−0.0940 *** (−3.09)		
Med2					0.0241 *** (2.73)	0.0129 (1.57)
c.Med2#c.CSR					−0.1125 *** (−3.36)	−0.0834 *** (−2.89)
Age	−0.0921 (−1.17)	−0.0872 (−1.22)	−0.0867 (−1.12)	−0.0823 (−1.17)	−0.0727 (−0.95)	−0.0719 (−1.03)
Size	0.0637 *** (3.14)	0.0551 *** (2.85)	0.0530 *** (2.62)	0.0493** (2.57)	0.0574 *** (2.79)	0.0526 *** (2.67)
Lev	−0.3664 *** (−6.88)	−0.2820 *** (−5.87)	−0.3472 *** (−6.69)	−0.2706 *** (−5.78)	−0.3470 *** (−6.85)	−0.2694 *** (−5.83)
CFO	0.4414 *** (5.38)	0.2343 *** (3.03)	0.4068 *** (5.03)	0.2167 *** (2.79)	0.4144 *** (5.00)	0.2229 *** (2.84)
Growth	0.0925 *** (6.36)	0.0672 *** (5.24)	0.0909 *** (6.45)	0.0674 *** (5.39)	0.0904 *** (6.32)	0.0662 *** (5.23)
Intan	−0.3289 * (−1.91)	0.4498 *** (3.10)	−0.3338 * (−1.97)	0.4195 *** (2.86)	−0.3380 ** (−2.02)	0.4207 *** (2.92)
Staff	−0.0425 *** (−2.64)	−0.0287 * (−1.83)	−0.0425 *** (−2.83)	−0.0285 * (−1.88)	−0.0434 *** (−2.82)	−0.0293 * (−1.93)
Constant	−0.6542 * (−1.68)	−0.6845 * (−1.81)	−0.5596 (−1.48)	−0.6475 * (−1.77)	−0.6342 (−1.63)	−0.7024 * (−1.86)
Observations	1367	1367	1367	1367	1367	1367
Number of id	128	128	128	128	128	128
Company FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
R-squared	0.341	0.476	0.367	0.491	0.365	0.490
F	11.65 ***	13.65 ***	10.74 ***	13.11 ***	11.93 ***	13.62 ***

Note: Robust t-statistics in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

The correlation coefficients of CSR and Inn in column (2) are 0.2060 ($p < 0.01$) and 0.0222 ($p < 0.01$), respectively. Combining columns (1) and (2), the coefficient of CSR decreases from 0.2566 to 0.2060, which indicates that technological innovation plays a partially mediating role in the relationship between CSR and CFP and verifies that H3 holds.

The correlation coefficients of the interaction terms c_Med1*c_CSR and c_Med2*c_CSR in columns (3) and (5) are −0.1228 ($p < 0.01$) and −0.1125 ($p < 0.01$), respectively, supporting H4b and H4d.

The interaction terms c_Med1*c_CSR and c_Med2*c_CSR in columns (4) and (6) have correlation coefficients, which are −0.0940 ($p < 0.01$) and −0.0834 ($p < 0.01$), respectively, suggesting that the mediating effect of technological innovation is weakened, consistent with previous results.

4.4.2. Instrumental Variables (SYS-GMM)

To solve the endogeneity problem in the model, this study uses the SYS-GMM model, the dependent variables CFP and Inn with a period lag as instrumental variables, and regression using xtabond2. The results are shown in Tables 7 and 8. The instrumental variables are tested for serial correlation by AR(1) and AR(2), if the instrumental variables are valid, the first-order series should be correlated while the second-order series should be uncorrelated, which means that the p -value of AR(1) should be less than 0.1, while at the

same time, the p -value of AR(2) should be greater than 0.1. All the instrumental variables in Tables 7 and 8 pass the serial correlation test. In addition, the p -value of Hansen's test is greater than 0.1, then the instrumental variable passes the over-identification test.

Table 7. Regression results of SYS-GMM analysis of mediation effect of technological innovation.

	(1)	(2)	(3)
Variables	ROA	Inn	ROA
L.ROA/L.Inn	0.4365 *** (0.060)	0.3994 *** (0.069)	0.3573 *** (0.062)
CSR	0.1021 *** (0.020)	2.5436 *** (0.627)	0.0592 *** (0.014)
Inn			0.0089 *** (0.001)
Age	0.0089 (0.005)	0.9540 *** (0.218)	−0.0017 (0.007)
Size	−0.0024 (0.003)	0.1801 (0.183)	0.0003 (0.004)
Lev	−0.0505 *** (0.012)	−2.2183 *** (0.552)	−0.0231 ** (0.010)
CFO	0.2080 *** (0.025)	4.4779 *** (1.258)	0.1398 *** (0.023)
Growth	0.0437 *** (0.007)	0.6188 (0.374)	0.0398 *** (0.006)
Intan	−0.0864 * (0.046)	−18.1341 *** (4.080)	0.2681 *** (0.058)
Staff	0.0033 (0.003)	−0.1936 (0.181)	0.0016 (0.004)
Constant	0.0035 (0.055)	−3.7802 (3.156)	−0.0328 (0.063)
Observations	1239	1239	1239
Number of id	128	128	128
Company FE	YES	YES	YES
Year FE	YES	YES	YES
Hansen	0.546	0.427	0.166
AR(1)	0.000	0.000	0.000
AR(2)	0.137	0.381	0.160

Note: Standard errors in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

In Table 7, the coefficients of CSR in columns (1) to (3) are 0.1021 ($p < 0.01$), 2.5436 ($p < 0.01$), and 0.0592 ($p < 0.01$), respectively, and the coefficient of Inn in column (3) is 0.0089 ($p < 0.01$). The above regression results indicate that under the use of the instrumental variables test, the relationship between CSR and financial performance still shows a significant positive correlation, and the fulfillment of social responsibility by enterprises helps them to improve their financial performance, while technological innovation plays a mediating role between the two. The conclusion is consistent with the previous regression results, indicating that the findings remain unchanged after controlling endogeneity issues.

In Table 8, column (1) c_Med1*c_CSR ($\beta = -0.0689$, $p < 0.01$) and column (2) c_Med1*c_CSR ($\beta = -2.2285$, $p < 0.01$) indicate that positive media coverage plays a negative moderating role in the pathways of CSR-CFP and CSR-Inn. In column (4), c_Med2*c_CSR ($\beta = -0.0529$, $p < 0.01$), and in column (5), c_Med2*c_CSR ($\beta = -2.1427$, $p < 0.01$), suggesting that negative media coverage plays a negative moderating role in the pathways of CSR-CFP and CSR-Inn. Both c_Med1*c_CSR ($\beta = -0.0551$, $p < 0.01$) in column (3) and c_Med2*c_CSR ($\beta = -0.0469$, $p < 0.01$) in column (6) are significant, suggesting that both positive and negative media coverage play negatively moderating roles in the mediation of technological innovation. The above findings are consistent with the previously drawn conclusions, indicating robust conclusions.

Table 8. Regression results of the SYS-GMM analysis of the moderation effects of media coverage.

	(1)	(2)	(3)	(4)	(5)	(6)
Variables	ROA	Inn	ROA	ROA	Inn	ROA
L.ROA/L.Inn	0.3947 *** (0.063)	0.4033 *** (0.060)	0.5361 *** (0.065)	0.4200 *** (0.066)	0.3535 *** (0.065)	0.5270 *** (0.065)
CSR	0.3504 *** (0.071)	10.6187 *** (3.059)	0.2752 *** (0.067)	0.2470 *** (0.068)	8.8340 *** (2.430)	0.2149 *** (0.055)
Inn			0.0099 *** (0.001)			0.0098 *** (0.001)
Med1	0.0219 *** (0.004)	0.7836 *** (0.247)	0.0161 *** (0.004)			
c.Med1 × c.CSR	−0.0689 *** (0.017)	−2.2285 *** (0.806)	−0.0551 *** (0.016)			
Med2				0.0175 *** (0.005)	0.8311 *** (0.224)	0.0125 *** (0.004)
c.Med2 × c.CSR				−0.0529 *** (0.018)	−2.1427 *** (0.778)	−0.0469 *** (0.015)
Age	0.0090 (0.007)	1.0680 *** (0.258)	−0.0022 (0.005)	0.0118 * (0.006)	0.9185 *** (0.258)	−0.0013 (0.006)
Size	−0.0017 (0.004)	−0.0479 (0.179)	−0.0076 ** (0.003)	−0.0007 (0.004)	−0.0818 (0.174)	−0.0071 ** (0.003)
Lev	−0.0597 *** (0.013)	−1.9788 *** (0.587)	0.0016 (0.010)	−0.0569 *** (0.013)	−2.3899 *** (0.616)	0.0003 (0.009)
CFO	0.1920 *** (0.027)	4.7745 *** (1.140)	0.0802 *** (0.024)	0.1885 *** (0.028)	4.9975 *** (1.409)	0.0915 *** (0.023)
Growth	0.0424 *** (0.006)	0.4412 (0.309)	0.0403 *** (0.007)	0.0417 *** (0.008)	0.5741 (0.361)	0.0414 *** (0.007)
Intan	−0.0904 * (0.049)	−23.7789 *** (4.553)	0.2654 *** (0.049)	−0.0760 (0.050)	−24.9713 *** (4.721)	0.2670 *** (0.046)
Staff	0.0012 (0.004)	−0.1357 (0.170)	0.0040 (0.003)	0.0007 (0.004)	−0.0608 (0.197)	0.0047 (0.003)
Constant	−0.0618 (0.065)	−1.8588 (3.493)	0.0506 (0.055)	−0.0549 (0.062)	−0.5655 (3.302)	0.0492 (0.052)
Observations	1239	1239	1239	1239	1239	1239
Number of id	128	128	128	128	128	128
Company FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Hansen	0.284	0.168	0.483	0.309	0.140	0.615
AR(1)	0.000	0.000	0.000	0.000	0.000	0.000
AR(2)	0.142	0.306	0.122	0.126	0.480	0.136

Note: Standard errors in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

4.4.3. The Bootstrap Test

The previous study used the method of sequential test coefficients to detect the mediating effect of technological innovation, but the method has the limitation of low total confidence, so this section uses the Bootstrap method to test the mediating effect of technological innovation. In this study, the bias-corrected Bootstrap method is used according to Hayes [101], and the test results are calculated as shown in Table 9. As can be seen from the table, the test result of direct effect (CSR → ROA) does not include 0 (BootLLIC = 0.0671, BootULIC = 0.1012) at 95% confidence interval, indicating that the direct effect is significant, and the direct effect is 0.0830. The test result of mediating effect (CSR → Inn → ROA) does not include 0 (BootLLIC = 0.0123, BootULIC = 0.0368), indicating that the mediation effect of technological innovation is significant, and the mediation effect is 0.0235. It can be concluded that the technological innovation of enterprises has a partial mediation effect on the impact of CSR on financial performance; therefore, H3 is re-validated.

Table 9. Mediation effect test of Bootstrap analysis.

Model	Effect	Observed Coefficient	Bootstrap Std. Err.	BootLLIC	BootULIC
CSR → Inn → ROA	Mediation effect	0.0235	0.0062	0.0123	0.0368
	Direct effect	0.0830	0.0088	0.0671	0.1012
	Total effect		0.1065		

The mediating effect of having media coverage moderation is then tested using the Bootstrap method. The findings are shown in Table 10. At two different values of the moderating variable Med1 at low and high, the mediating effects of technological innovation are 0.0409 (BootLLIC = 0.0257, BootULIC = 0.0586) and 0.0137 (BootLLIC = 0.0037, BootULIC = 0.0253), respectively. This suggests that the mediating effect of technological innovation diminishes as the amount of positive media coverage increases. At the low and high different values of the moderator variable Med2, the mediating effects of technological innovation are 0.0423 (BootLLIC = 0.0266, BootULIC = 0.0599) and 0.0163 (BootLLIC = 0.0063, BootULIC = 0.0270), respectively. This suggests that the mediating effect of technological innovation diminishes as the amount of negative media coverage increases. These results suggest that positive and negative media coverage reverse the mediating effect of technological innovation between CSR and CFP.

Table 10. The Conditional Indirect Effect of Bootstrap analysis.

Model	Effect	Observed Coefficient	Bootstrap Std. Err.	BootLLCI	BootULCI
CSR → Inn → ROA (Med1)	Min Med1	0.0409	0.0083	0.0257	0.0586
	Mean Med1	0.0273	0.0059	0.0168	0.0399
	Max Med1	0.0137	0.0054	0.0037	0.0253
CSR → Inn → ROA (Med2)	Min Med2	0.0423	0.0085	0.0266	0.0599
	Mean Med2	0.0293	0.0061	0.0185	0.0423
	Max Med2	0.0163	0.0053	0.0063	0.0270

5. Conclusions and Discussion

This study focuses on the practical problems of social responsibility and financial performance of pharmaceutical enterprises and is based on the research results of related theories such as resource-based theory, stakeholder theory, and signaling theory. It takes “corporate social responsibility-corporate innovation-financial performance” as the research path to construct a two-way fixed effects model. This research selects the pharmaceutical listed companies in China’s Shanghai and Shenzhen stock markets from 2010 to 2020 as the research sample and conducts in-depth research on the relationship between CSR, corporate innovation, and financial performance of pharmaceutical enterprises. After the above research, the following research conclusions are finally drawn.

1. Corporate fulfillment of social responsibility is positively related to CFP, and H1 is valid. Although some studies have shown that there is a negative relationship between CSR and CFP [12], this research using panel data and multiple econometric methods with Chinese pharmaceutical companies as research samples proves that CSR promotes the growth of financial performance [6,43]. Combined with stakeholder theory, RBV, and agency theory, corporations obtain more social resources while reducing corporate agency costs, forming a competitive advantage for corporations, and increasing profits while helping them control costs. Pharmaceutical manufacturers should incorporate the fulfillment of social responsibility into their business strategy [9], which not only creates intangible assets for the enterprise, but also helps the enterprise to avoid risks, thus realizing a high level of financial performance.
2. Corporate fulfillment of social responsibility promotes corporate innovation, while corporate innovation partially mediates between CSR and CFP; H2 and H3 are valid. This research tested the positive effect of CSR on technological innovation through a three-step regression analysis [64] and confirmed the existence of the mediating effect of technological innovation [71]. Pharmaceutical companies are oriented to research and development innovation due to the fulfillment of social responsibility. Companies’ participation in social responsibility activities through technological innovation can reduce their financial costs and negative impacts, enhance their innovation initiatives,

and increase their profits. For example, optimizing the production process, which not only saves resources and reduces costs but also improves the quality of the product and establishes a good relationship with stakeholders, creates a competitive advantage and improves the financial performance of the company [60].

3. Positive and negative media coverage has a negative moderating effect on the impact of CSR and CFP as well as CSR and technological innovation, which is accepted for H4b, H4d, H5b, and H5d, but rejected for H4a, H4c, H5a, and H5c. The negative moderating effect of positive media coverage is because positive media coverage exaggerates a firm's innovation achievements or CSR performance. As a result, the firm has to bear additional liability costs to maintain its image and reputation, which increases operating costs and ultimately affects the firm's financial performance [37,80,81]. Negative media coverage negative moderating effect is due to the negative coverage may lead to the public's questioning of the CSR or innovation ability of the enterprise. As a result, the enterprise may be forced to reduce the CSR or innovation investment in the face of the pressure of negative coverage or to use the funds to restore the corporate image and reputation conveniently, which will lead to a decline in the financial performance [27,77,82].

6. Practical Implications

The pharmaceutical industry, which is responsible for safeguarding people's health, must correct its attitude and change the previous misconception that undertaking social responsibility will reduce corporate value. The pharmaceutical industry should realize the positive effects of social responsibility on enhancing corporate image, gaining market support, and improving financial performance. Although taking social responsibility will incur some costs, the benefits that corporations obtain will be far greater than the costs they incur. Pharmaceutical companies should combine innovation with CSR to prevent resource wastage and reduce non-essential production costs by integrating resources. Pharmaceutical corporations should establish incentive and supervision mechanisms for managers to curb their self-interested behavior, reduce agency costs, and promote the maximization of corporate value. Pharmaceutical companies should reasonably utilize the powerful communication power of the media to establish a good environment for social responsibility information disclosure and supervision.

As an external stakeholder in the development of enterprises, the government should make a comprehensive plan for the social responsibility of the pharmaceutical industry by its characteristics. For enterprises that actively fulfill their social responsibility, the government can give them policy or economic incentives through public praise and tax relief. Properly alleviating the financial pressure on pharmaceutical companies will help to create a boom in corporate responsibility and create a fair and harmonious market environment for the pharmaceutical industry.

7. Limitation

Due to limitations in time, capacity, and data availability, there are still some shortcomings in this research that need to be improved in future research. Firstly, the indicators selected in the study of CSR come from the social responsibility rating of Hexun.com; although it has a certain degree of scientific and comprehensiveness, the differences in the measurement methods of CSR may also lead to different results of the research. Therefore, it is necessary to further explore and improve the index system of CSR in the future. Secondly, the empirical research of the study selects the data of Chinese pharmaceutical listed companies and does not cover other industries and non-listed companies. Therefore, there are certain limitations in data selection and the generalizability of the research conclusions.

Finally, this research only considers the mediating role of technological innovation and the moderating role of media coverage. Whether other mediating factors influence the relationship between CSR and CFP, and whether it may be moderated and influenced by additional factors, is also worth expanding upon and exploring in the future.

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References

1. Boubaker, S.; Chebbi, K.; Gira, J. Top management inside debt and corporate social responsibility? Evidence from the US. *Q. Rev. Econ. Financ.* **2020**, *78*, 98–115. [\[CrossRef\]](#)
2. Sharma, D.; Chakraborty, S. Corporate social responsibility and financial performance: Does CSR strategic integration matter? *Cogent Bus. Manag.* **2024**, *11*, 2392182. [\[CrossRef\]](#)
3. Chhaparia, P.; Jha, M. Corporate Social Responsibility in India: The Legal Evolution of CSR Policy. *Amity Glob. Bus. Rev.* **2022**, *13*, 79.
4. Çera, G.; Ndou, V. The role of innovation and social media in explaining corporate social responsibility–business sustainability nexus in entrepreneurial SMEs. *Eur. J. Innov. Manag.* **2024**, *184*, 114880. [\[CrossRef\]](#)
5. Coelho, R.; Jayantilal, S.; Ferreira, J.J. The impact of social responsibility on corporate financial performance: A systematic literature review. *Corp. Soc. Responsib. Environ. Manag.* **2023**, *30*, 1535–1560. [\[CrossRef\]](#)
6. Ahmad, M.; Wu, Q.; Ahmed, D. Does CSR digitalization improve the sustainable competitive performance of SMEs? Evidence from an emerging economy. *Sustain. Account. Manag. Policy J.* **2023**, *15*, 119–147. [\[CrossRef\]](#)
7. Zhang, C.; Liu, Q.; Ge, G.; Hao, Y.; Hao, H. The impact of government intervention on corporate environmental performance: Evidence from China's national civilized city award. *Financ. Res. Lett.* **2021**, *39*, 101624. [\[CrossRef\]](#)
8. Islam, T.; Islam, R.; Pitafi, A.H.; Xiaobei, L.; Rehmani, M.; Irfan, M.; Mubarak, M.S. The impact of corporate social responsibility on customer loyalty: The mediating role of corporate reputation, customer satisfaction, and trust. *Sustain. Prod. Consum.* **2021**, *25*, 123–135. [\[CrossRef\]](#)
9. Bae, G.; Ahn, J.H.; Lim, K.M.; Bae, S. Corporate social responsibility of pharmaceutical industry in Korea. *Front. Pharmacol.* **2022**, *13*, 950669. [\[CrossRef\]](#)
10. Hadj, T.B.; Omri, A.; Al-Tit, A. Mediation role of responsible innovation between CSR strategy and competitive advantage: Empirical evidence for the case of Saudi Arabia enterprises. *Manag. Sci. Lett.* **2020**, *10*, 747–762. [\[CrossRef\]](#)
11. Lin, W.L.; Ho, J.A.; Lee, C.; Ng, S.I. Impact of positive and negative corporate social responsibility on automotive firms' financial performance: A market-based asset perspective. *Corp. Soc. Responsib. Environ. Manag.* **2020**, *27*, 1761–1773. [\[CrossRef\]](#)
12. Ahamed, N.; Tripathi, N.N. Does mandatory corporate social responsibility expenditure by businesses help their stakeholders? *Corp. Soc. Responsib. Environ. Manag.* **2023**, *30*, 2292–2303. [\[CrossRef\]](#)
13. Roth, V. Talking is Silver, Doing is Gold?—The Influence of Corporate Social Responsibility on Corporate Financial Performance. *Jr. Manag. Sci.* **2021**, *6*, 637–672.
14. Li, X.; Esfahbodi, A.; Zhang, Y. The Impact of Corporate Social Responsibility Implementation on Enterprises' Financial Performance—Evidence from Chinese Listed Companies. *Sustainability* **2024**, *16*, 1848. [\[CrossRef\]](#)
15. Zhang, Y.; Guo, H. Can Pharmaceutical Companies Fulfill Their Social Responsibilities to Promote Corporate Performance? *J. Hunan Univ. Financ. Econ.* **2019**, *35*, 25–32.
16. Costa, J.; Fonseca, J.P. The Impact of Corporate Social Responsibility and Innovative Strategies on Financial Performance. *Risks* **2022**, *10*, 103. [\[CrossRef\]](#)

17. Fosu, E.; Yi, K.; Asiedu, D. The effect of CSR on corporate social performance: Mediating role of corporate image, green innovation and moderating role of corporate identity. *Corp. Soc. Responsib. Environ. Manag.* **2023**, *31*, 69–88. [\[CrossRef\]](#)
18. Chen, P.; Dagestani, A.A.; Kim, S. Corporate social responsibility and green exploratory innovation—The moderating role of three environmental regulations. *Technol. Anal. Strateg. Manag.* **2023**, *36*, 3214–3226. [\[CrossRef\]](#)
19. Bocquet, R.; Le Bas, C.; Mothe, C.; Poussing, N. Are firms with different CSR profiles equally innovative? Empirical analysis with survey data. *Eur. Manag. J.* **2013**, *31*, 642–654. [\[CrossRef\]](#)
20. Ji, H.; Xu, G.; Zhou, Y.; Miao, Z. The Impact of Corporate Social Responsibility on Firms' Innovation in China: The Role of Institutional Support. *Sustainability* **2019**, *11*, 6369. [\[CrossRef\]](#)
21. Pérez, A.; García de los Salmones, M.d.M.; López-Gutiérrez, C. Market reactions to CSR news in different industries. *Corp. Commun. Int. J.* **2020**, *25*, 243–261.
22. Guo, Z.; Lu, C. Corporate Environmental Performance in China: The Moderating Effects of the Media versus the Approach of Local Governments. *Int. J. Environ. Res. Public Health* **2020**, *18*, 150. [\[CrossRef\]](#) [\[PubMed\]](#)
23. Chang, K.; Shim, H.; Yi, T.D. Corporate social responsibility, media freedom, and firm value. *Financ. Res. Lett.* **2019**, *30*, 1–7. [\[CrossRef\]](#)
24. Wang, L.; Li, Y.; Li, X. Corporate Social Responsibility Disclosure, Media Coverage and Financial Performance: An Empirical Analysis in the Chinese Context. *Singap. Econ. Rev.* **2020**, *69*, 251–268.
25. Cahan, S.F.; Chen, C.; Chen, L.; Nguyen, N.H. Corporate social responsibility and media coverage. *J. Bank. Financ.* **2015**, *59*, 409–422.
26. Kim, M.; Yin, X.; Lee, G. The effect of CSR on corporate image, customer citizenship behaviors, and customers' long-term relationship orientation. *Int. J. Hosp. Manag.* **2020**, *88*, 102520.
27. Li, Z.; Ling, Z. The Impact of Media Coverage on Enterprise Green Technology Innovation: The Moderating Role of Marketization Level. *Manag. Rev.* **2020**, *32*, 132–144.
28. Wu, S.; Zhang, H.; Wei, T. Corporate Social Responsibility Disclosure, Media Reports, and Enterprise Innovation: Evidence from Chinese Listed Companies. *Sustainability* **2021**, *13*, 8466. [\[CrossRef\]](#)
29. Javed, M.; Hussain, G.; Ali, H. The effects of corporate social responsibility on corporate reputation and firm financial performance: Moderating role of responsible leadership. *Corp. Soc. Responsib. Environ. Manag.* **2019**, *27*, 1395–1409. [\[CrossRef\]](#)
30. McConnell, L. The role of the media in corporate governance: Do the media influence managers' capital allocation decisions? *J. Financ. Econ.* **2013**, *110*, 1–17.
31. Qing, L.; Alnafrh, I.; Dagestani, A.A. Does green technology innovation benefit corporate financial performance? Investigating the moderating effect of media coverage. *Corp. Soc. Responsib. Environ. Manag.* **2023**, *31*, 1722–1740. [\[CrossRef\]](#)
32. Li, J.C.; Benamraoui, A.; Shah, N.; Mathew, S. Dynamic Capability and Strategic Corporate Social Responsibility Adoption: Evidence from China. *Sustainability* **2021**, *13*, 5333. [\[CrossRef\]](#)
33. Demir, M.; Min, M. Consistencies and discrepancies in corporate social responsibility reporting in the pharmaceutical industry. *Sustain. Account. Manag. Policy J.* **2019**, *10*, 333–364. [\[CrossRef\]](#)
34. Yang, M.; Wang, J.; Maresova, P.; Akbar, M. Can the spending of corporate social responsibility be offset? Evidence from pharmaceutical industry. *Econ. Res. Istraz.* **2022**, *35*, 6279–6303.
35. Huang, Q.; Wan, A.; Elahi, E.; Peng, B.; Li, J. Can corporate social responsibility enhance corporate competitiveness? An empirical analysis based on listed companies in China's pharmaceutical manufacturing industry. *Corp. Soc. Responsib. Environ. Manag.* **2023**, *30*, 2639–2650.
36. Yang, M.; Maresova, P. Adopting Occupational Health and Safety Management Standards: The Impact on Financial Performance in Pharmaceutical Firms in China. *Risk Manag. Healthc. Policy* **2020**, *13*, 1477–1487. [\[CrossRef\]](#)
37. Thompson, K.; Sheldon, O. *The Philosophy of Management*; Pitman Publishing: London, UK, 1924.
38. Li, J.; Fu, T.; Han, S.; Liang, R. Exploring the Impact of Corporate Social Responsibility on Financial Performance: The Moderating Role of Media Attention. *Sustainability* **2023**, *15*, 5023. [\[CrossRef\]](#)
39. Friedman, M. The Social Responsibility of Business is to Increase its Profits. *N. Y. Times Mag.* **2007**, *13*, 173–178.
40. Baboukardos, D. The valuation relevance of environmental performance revisited: The moderating role of environmental provisions. *Br. Account. Rev.* **2018**, *50*, 32–47. [\[CrossRef\]](#)
41. Cantele, S.; Zardini, A. Is sustainability a competitive advantage for small businesses? An empirical analysis of possible mediators in the sustainability–financial performance relationship. *J. Clean. Prod.* **2018**, *182*, 166–176.
42. Ankersmit, L. The contribution of EU public procurement law to corporate social responsibility. *Eur. Law J.* **2020**, *26*, 9–26.
43. Athar, M.; Chughtai, S.; Rashid, D.A. Corporate governance and bank performance: Evidence from banking sector of Pakistan. *Corp. Gov. Int. J. Bus. Soc.* **2023**, *23*, 1339–1360.
44. Li, T.; Meng, X.; Jia, F.; Chen, L.; Wang, L. Do carbon neutrality initiatives affect the shareholder value of firms? *Evidence China J. Clean. Prod.* **2023**, *418*, 138115.

45. Yang, M.; Bento, P.; Akbar, A. Does CSR Influence Firm Performance Indicators? Evidence from Chinese Pharmaceutical Enterprises. *Sustainability* **2019**, *11*, 5656. [\[CrossRef\]](#)
46. El Akremi, A.; Gond, J.-P.; Swaen, V.; De Roeck, K.; Igalens, J. How Do Employees Perceive Corporate Responsibility? Development and Validation of a Multidimensional Corporate Stakeholder Responsibility Scale. *J. Manag.* **2018**, *44*, 619–657.
47. Bhardwaj, P.; Chatterjee, P.; Demir, K.D.; Turut, O. When and how is corporate social responsibility profitable? *J. Bus. Res.* **2018**, *84*, 206–219.
48. Yang, M.; Lin, Q.; Maresova, P. Does Employee Care Trigger Innovation Under a Healthy and Safe Working Environment? Evidence from the Pharmaceutical Industry in China. *Healthcare* **2021**, *9*, 194. [\[CrossRef\]](#)
49. Yi Xie, B.; Zhou, L.; Wei, Y. Does CSR affect the cost of equity capital: Empirical evidence from the targeted poverty alleviation of listed companies in China. *PLoS ONE* **2020**, *15*, e0227952.
50. Jo, H.; Harjoto, M.A. Corporate Governance and Firm Value: The Impact of Corporate Social Responsibility. *J. Bus. Ethics* **2011**, *103*, 351–383.
51. Chen, S.; Song, Y.; Gao, P. Environmental, social, and governance (ESG) performance and financial outcomes: Analyzing the impact of ESG on financial performance. *J. Environ. Manag.* **2023**, *345*, 118829. [\[CrossRef\]](#)
52. Sun, W.; Cui, K. Linking corporate social responsibility to firm default risk. *Eur. Manag. J.* **2014**, *32*, 275–287. [\[CrossRef\]](#)
53. Kim, S.; Lee, G.; Kang, H.-G. Risk management and corporate social responsibility. *Strateg. Manag. J.* **2021**, *42*, 202–230. [\[CrossRef\]](#)
54. Husaini, H.; Nurazi, R.; Saiful, S. Moderating role of risk management effectiveness on corporate social responsibility-corporate performance relationship. *Cogent Bus. Manag.* **2023**, *10*, 2194465.
55. Xie Huo, J.; Zou, H. Green process innovation, green product innovation, and corporate financial performance: A content analysis method. *J. Bus. Res.* **2019**, *101*, 697–706. [\[CrossRef\]](#)
56. Zhang, D.; Rong, Z.; Ji, Q. Green innovation and firm performance: Evidence from listed companies in China. *Resour. Conserv. Recycl.* **2019**, *144*, 48–55.
57. Poussing, N. Does corporate social responsibility encourage sustainable innovation adoption? Empirical evidence from Luxembourg. *Corp. Soc. Responsib. Environ. Manag.* **2018**, *26*, 681–689.
58. Zhu, Q.; Zou, F.; Zhang, P. The role of innovation for performance improvement through corporate social responsibility practices among small and medium-sized suppliers in China. *Corp. Soc. Responsib. Environ. Manag.* **2019**, *26*, 341–350.
59. Canh, N.T.; Liem, N.T.; Thu, P.A.; Khuong, N.V. The Impact of Innovation on the Firm Performance and Corporate Social Responsibility of Vietnamese Manufacturing Firms. *Sustainability* **2019**, *11*, 3666. [\[CrossRef\]](#)
60. Ruan, R.; Chen, W.; Zhu, Z. Linking Environmental Corporate Social Responsibility with Green Innovation Performance: The Mediating Role of Shared Vision Capability and the Moderating Role of Resource Slack. *Sustainability* **2022**, *14*, 16943. [\[CrossRef\]](#)
61. Zhou, H.; Wang, Q.; Zhao, X. Corporate social responsibility and innovation: A comparative study. *Ind. Manag. Data Syst.* **2020**, *120*, 863–882. [\[CrossRef\]](#)
62. Labahn, D.W.; Krapfel, R. Early Supplier Involvement in Customer New Product Development: A Contingency Model of Component Supplier Intentions. *J. Bus. Res.* **2000**, *47*, 173–190. [\[CrossRef\]](#)
63. Cook, K.A.; Romi, A.M.; Sánchez, D.; Sánchez, J.M. The influence of corporate social responsibility on investment efficiency and innovation. *J. Bus. Financ. Account.* **2019**, *46*, 494–537. [\[CrossRef\]](#)
64. Yannan, D.; Ahmed, A.A.A.; Kuo, T.-H.; Malik, H.A.; Nassani, A.A.; Haffar, M.; Suksatan, W.; Iramofu, D.P.F. Impact of CSR, innovation, and green investment on sales growth: New evidence from manufacturing industries of China and Saudi Arabia. *Econ. Res.-Ekon. Istraživanja* **2021**, *35*, 4537–4556. [\[CrossRef\]](#)
65. Wang, C.; Tang, F.; Zhang, Q.; Zhang, W. How does corporate social responsibility contribute to innovation performance? The moderating role of social media strategic capability and big data analytics capability. *Eur. J. Innov. Manag.* **2023**, *28*, 631–655. [\[CrossRef\]](#)
66. Murat Ar, I.; Baki, B. Antecedents and performance impacts of product versus process innovation. *Eur. J. Innov. Manag.* **2011**, *14*, 172–206. [\[CrossRef\]](#)
67. Wernerfelt, B. *Adaptation, Specialization, and the Theory of the Firm: Foundations of the Resource-Based View*; Cambridge University Press: Cambridge, UK, 2016.
68. Graafland, J. Competition in technology and innovation, motivation crowding, and environmental policy. *Corp. Soc. Responsib. Environ. Manag.* **2020**, *27*, 137–145. [\[CrossRef\]](#)
69. Lis, B. The Relevance of Corporate Social Responsibility for a Sustainable Human Resource Management: An Analysis of Organizational Attractiveness as a Determinant in Employees' Selection of a (Potential) Employer. *Manag. Rev.* **2012**, *23*, 279–295. [\[CrossRef\]](#)
70. Cegarra-Navarro, J.-G.; Reverte, C.; Gómez-Melero, E.; Wensley, A.K.P. Linking social and economic responsibilities with financial performance: The role of innovation. *Eur. Manag. J.* **2016**, *34*, 530–539. [\[CrossRef\]](#)

71. Zanjirchi, S.M.; Jalilian, N.; Mehrjardi, M.S. Open innovation: From technology exploitation to creation of superior performance. *Asia Pac. J. Innov. Entrep.* **2019**, *13*, 326–340. [\[CrossRef\]](#)
72. Bahta, D.; Yun, J.; Islam, M.R.; Ashfaq, M. Corporate social responsibility, innovation capability and firm performance: Evidence from SME. *Soc. Responsib. J.* **2020**, *17*, 840–860. [\[CrossRef\]](#)
73. Chen, X. Corporate social responsibility disclosure, media attention and corporate performance. *Financ. Account. Newsl.* **2018**, *2018*, 31–34.
74. Xiang, X.; Liu, C.; Yang, M.; Zhao, X. Confession or justification: The effects of environmental disclosure on corporate green innovation in China. *Corp. Soc. Responsib. Environ. Manag.* **2020**, *27*, 2735–2750.
75. Gupta, S.; Nawaz, N.; Tripathi, A.; Muneer, S.; Ahmad, N. Using Social Media as a Medium for CSR Communication, to Induce Consumer–Brand Relationship in the Banking Sector of a Developing Economy. *Sustainability* **2021**, *13*, 3700. [\[CrossRef\]](#)
76. Chen, Z.; Jin, J.; Li, M. Does media coverage influence firm green innovation? The moderating role of regional environment. *Technol. Soc.* **2022**, *70*, 102006.
77. Duan, Y.; Wang, W.; Zhou, W. The multiple mediation effect of absorptive capacity on the organizational slack and innovation performance of high-tech manufacturing firms: Evidence from Chinese firms. *Int. J. Prod. Econ.* **2020**, *229*, 107754.
78. Liang, T.; Zhang, Y.-J.; Qiang, W. Does technological innovation benefit energy firms' environmental performance? The moderating effect of government subsidies and media coverage. *Technol. Forecast. Soc. Change* **2022**, *180*, 121728.
79. Li, X.; Li, C.; Wang, Z.; Jiao, W.; Pang, Y. The effect of corporate philanthropy on corporate performance of Chinese family firms: The moderating role of religious atmosphere. *Emerg. Mark. Rev.* **2021**, *49*, 100757. [\[CrossRef\]](#)
80. Aula, P.; Mantere, S. *Strategic Reputation Management: Towards a Company of Good*; Routledge: London, UK, 2008.
81. Li, W.; Li, W.; Seppänen, V.; Koivumäki, T. Effects of greenwashing on financial performance: Moderation through local environmental regulation and media coverage. *Bus. Strategy Environ.* **2022**, *32*, 820–841.
82. Walker, K.; Wan, F. The Harm of Symbolic Actions and Green-Washing: Corporate Actions and Communications on Environmental Performance and Their Financial Implications. *J. Bus. Ethics* **2012**, *109*, 227–242.
83. Gama, M.A.B.; Lana, J.; Bueno, G.; Marcon, R.; Bandeira-de-Mello, R. Moderating the connections: Media coverage and firm market value. *Corp. Gov. Int. J. Bus. Soc.* **2022**, *23*, 607–627.
84. Graf-Vlachy, L.; Oliver, A.G.; Banfield, R.; König, A.; Bundy, J. Media Coverage of Firms: Background, Integration, and Directions for Future Research. *J. Manag.* **2019**, *46*, 36–69. [\[CrossRef\]](#)
85. Luo, J.; Liu, Q. Corporate social responsibility disclosure in China: Do managerial professional connections and social attention matter? *Emerg. Mark. Rev.* **2020**, *43*, 100679. [\[CrossRef\]](#)
86. Dai, L.; Shen, R.; Zhang, B. Does the media spotlight burn or spur innovation? *Rev. Account. Stud.* **2021**, *26*, 343–390. [\[CrossRef\]](#)
87. El Ghouli, S.; Guedhami, O.; Nash, R.; Patel, A. New Evidence on the Role of the Media in Corporate Social Responsibility. *J. Bus. Ethics* **2019**, *154*, 1051–1079. [\[CrossRef\]](#)
88. Wang, M.C. The relationship between environmental information disclosure and firm valuation: The role of corporate governance. *Qual. Quant.* **2016**, *50*, 1135–1151. [\[CrossRef\]](#)
89. Zhang, Y.; Peng, S. Media Attention and Enterprise Innovation Performance. *Guizhou Univ. Financ. Econ.* **2020**, *4*, 29–39.
90. Wu, L.; Shao, Z.; Yang, C.; Ding, T.; Zhang, W. The Impact of CSR and Financial Distress on Financial Performance—Evidence from Chinese Listed Companies of the Manufacturing Industry. *Sustainability* **2020**, *12*, 6799. [\[CrossRef\]](#)
91. Arbogast, G.W.; Agrawal, V. Does Corporate Social Responsibility Affect Corporate Profit Margins? *J. Manag. Eng. Integr.* **2019**, *12*, 67–77. [\[CrossRef\]](#)
92. Long, X.; Bu, X.; Xie, P.; Shao, Y. Woman on board, corporate social responsibility and financial performance: New evidence from China. *Humanit. Soc. Sci. Commun.* **2024**, *11*, 1–12. [\[CrossRef\]](#)
93. Pan, X.; Jing, Z.; Song, M.; Ai, B. Innovation resources integration pattern in high-tech entrepreneurial enterprises. *Int. Entrep. Manag. J.* **2018**, *14*, 51–66.
94. Cozza, C.; Malerba, F.; Mancusi, M.L.; Perani, G.; Vezzulli, A. Innovation, profitability and growth in medium and high-tech manufacturing industries: Evidence from Italy. *Appl. Econ.* **2012**, *44*, 1963–1976. [\[CrossRef\]](#)
95. Bartoloni, E. Capital structure and innovation: Causality and determinants. *Empirica* **2011**, *40*, 111–151. [\[CrossRef\]](#)
96. Du, X.; Pei, H.; Du, Y.; Zeng, Q. Media coverage, family ownership, and corporate philanthropic giving: Evidence from China. *J. Manag. Organ.* **2015**, *22*, 224–253. [\[CrossRef\]](#)
97. Zang, Z.; Chen, H. Media coverage and impression management in corporate social responsibility reports. *Sustain. Account. Manag. Policy J.* **2019**, *11*, 863–886.
98. D'Amato, A.; Falivena, C. Corporate social responsibility and firm value: Do firm size and age matter? Empirical evidence from European listed companies. *Corp. Soc. Responsib. Environ. Manag.* **2020**, *27*, 909–924. [\[CrossRef\]](#)
99. Li, X.; Zhang, Z. The effects of corporate social responsibility on innovation and performance of firms in China: A structural equation model analysis. *Nankai Bus. Rev. Int.* **2024**, *15*, 660–683. [\[CrossRef\]](#)

100. Baron, R.M.; Kenny, D.A. The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *J. Personal. Soc. Psychol.* **1986**, *51*, 1173–1182. [[CrossRef](#)]
101. Hayes, A.F.; Scharkow, M. The relative trustworthiness of inferential tests of the indirect effect in statistical mediation analysis: Does method really matter? *Psychol. Sci.* **2013**, *24*, 1918–1927. [[CrossRef](#)]
102. Yu, X. *Research on the Impact of Corporate Social Responsibility on Corporate Financial Performance from the Perspective of Innovation Capability*; Nankai University: Tianjin, China, 2022.

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