

The Triple Interaction: Environmental Corporate Social Responsibility, Environmental Regulation, and Environmental Commitment in Shaping Environmental Performance in China

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Growing demands for environmental corporate social responsibility (ECSR) from firms have been brought about by the rise of environmental sustainability and green business management. An increasing number of academics have focused on the impact of ECSR on firm environmental performance (FEP). However, scant attention has been given to environmental commitment (EC) as a mediator and environmental regulation (ER) as a moderator. To bridge this gap, this study checks the impact of ECSR on FEP through EC. Moreover, the relationship between ECSR and FEP was investigated in the presence of ER. The data has been collected from manufacturing companies that operate in China using convenience sampling to disburse questionnaires among respondents. We received 354 valid responses to 560 questionnaires, and 106 responses were incomplete, making an impressive response rate of 76.95 %. The findings of this study reveal that ECSR significantly enhances FEP, indicating that companies engaging in responsible environmental practices can improve their environmental outcomes. It also confirms that EC serves as a mediator in the relationship between ECSR and FEP, suggesting that a firm's dedication to environmental sustainability strengthens the positive impact of ECSR on FEP. Additionally, the study finds that ER negatively moderates the link between ECSR and FEP. This means that stricter environmental regulations might dampen the positive effects of ECSR on a FEP. This study also has limitations and future directions, persuading the researcher to develop new avenues.

Keywords: *Environmental Corporate Social Responsibility; Environmental Regulation; Environmental Commitment; Stakeholder Theory; Environmental Performance.*

Introduction

Environmental Corporate Social Responsibility (ECSR) has emerged as a relatively recent concept in China that has become popular in the last 15 years. The 2008 earthquake had a huge effect on the country and its people, making ECSR and environmentally friendly business practices even more important. People were severely affected by the earthquake, which is why the government appealed to the private sector to help those in need (Lu *et al.*, 2021). Companies felt their social responsibility and stabilized people by providing help to those who were affected by the earthquake. This is the fourth dimension of corporate social responsibility described by Carroll, (1999). The social responsibility aspect came into being in China after this incident, and companies began to place a greater emphasis on their social responsibilities (Tang & Wang, 2020a). The origins of corporate social responsibility can be traced back to the seminal work of Bowen & Rodeback (1953), wherein they posited that it is incumbent upon every organization to actively engage in fulfilling its social obligations. These corporate social responsibility practices extended beyond merely addressing social aspects and emphasizing the importance of environmental conservation, especially in the wake of the 2008 earthquake (Jia & Zhang, 2013).

The recognition of the ECSR is widely accepted due to its diverse implications on companies' environmental performance (EP) (Ahmad *et al.*, 2021). Multinational corporation's responsibilities expand on a significant scale and play a constructive role in driving economic growth, particularly through job creation and enhanced productivity. It has been seen that industrial companies often have adverse environmental effects (Savari *et al.*, 2023). Existing literature suggests that multinational corporations can substantially contribute to pollution through diverse business activities. Recent concerns highlight the growing importance of the shortage of natural resources and environmental instability (An *et al.*, 2021). There is a clear connection between industrial companies and the negative effects that they have on the environment (Poskus, 2020).

Consequently, business companies generate economic value by transforming resources into valuable products or services, and they do it by the regulations that govern environmental preservation. It is impossible to separate these processes from the environmental dangers they cause (Khan *et al.*, 2021). There has been a discernible rise in environmental awareness among business organizations over the last several decades. Therefore, businesses must comply with the many international norms and treaties. The

significance of environmental treaty standards is growing worldwide, and the execution of these conforms has a substantial influence on the environment in which businesses operate. Businesses are required to conduct their operations in a socially responsible way, with a primary emphasis on environmental preservation, in order to meet the expectations of local communities and environmental responsibilities (Xiong *et al.*, 2023). Even though, environmental regulations (ERs) have been strict, and it has been seen the implementation of ERs has been effective and it is important for companies to protect the environment. In recent years, the concept of ECSR has caught the eye of academia and industry (Iannucci & Tampieri, 2023). Similarly, Chuang & Huang, (2018) believe that having ECSR positively effect to the EP of the firm. If companies are allowed to accurately measure and fund their environmental initiatives efficiently, they will be able to achieve sustainable EP. By reviewing the literature, it has been seen that there are so many studies which are conducted on ECSR –EP (Lu & Qu, 2023; Chuang & Huang, 2015), but researchers are still interested in exploring more due to contradictory findings (Qamar *et al.*, 2023). Few of the findings display a positive impact of corporate social responsibility on firm performance (Bacinello *et al.*, 2020; Javed *et al.*, 2020; Long *et al.*, 2020; Naseem *et al.*, 2020), while few of the findings display no effect of corporate social responsibility on firm performance (Kraus *et al.*, 2020). By observing contradicting findings, the question comes to mind: Does ECSR impact EP in the context of China?. The relationship between corporate social responsibility and firm performance is not only direct but also has several mediators which have been ignored in previous studies (Khan *et al.*, 2018). Therefore, there is a need to add mediator to explain the relationship well. Therefore, this study asks the new question: Does environmental commitment (EC) act as a mediator between ECSR-EP? This question raise to respond to the call of Luo & Qu, (2023) who emphasized that the relationship between ECSR-EP should be checked through EC. This research bridges this gap by bringing EC as a mediator because stakeholder theory claims the organizations should be environmentally committed to achieving sustainable environmental performance (Chang *et al.*, 2015; Lindblom & Ohlsson, 2011).

Previous research has proved the relationship between corporate social responsibility and firm performance, and, it has also been proved that this relationship is mediated by some intervening variables (Saeidi *et al.*, 2015). Furthermore, researchers argue that this relationship is not only limited to intervening variables, it should be checked through some contextual factors (Singh & Misra, 2021). These contextual factors may display its actual effect. By ignoring contextual factors, the relationship between corporate social responsibility and firm performance may be overvalued and biased, and the true implications of implementing corporate social responsibility to enrich firm performance may not be understood (Jia, 2020). Therefore, researchers suggest that to determine the actual effect of corporate social responsibility on firm performance, the presence of contextual factor is mandatory (Wang *et al.*, 2016; Wei *et al.*, 2017). Therefore, a new research question could be raised: Does ER act as a moderator between ECSR and EP?. From the perspective of institutional theory,

stringent regulations have the potential to encourage businesses to actively engage in environmental practices and to accept greater responsibility for the environment (Berrone *et al.*, 2013), which can consequently improve EP. Although, the role of ER in predicting EP has been investigated (Li & Ramanathan, 2018), its integration with ECSR has gained scant attention from the researchers. The reason behind to conduct a study is, no attention paid by the researchers to ECSR to increase the EP of the organization through EC, the moderating role of ER. Therefore, this study tries to fill above mentioned gaps and has research objectives:

- To check the impact of environmental CSR on environmental performance.
- To check the effect of environmental CSR on environmental performance in the presence of (mediator) environmental commitment.
- To examine the moderating role of environmental regulation between environmental CSR and environmental performance.

This research contributes in several significant ways. The present study explores the relationship using a comprehensive empirical framework to discuss how ECSR improve EP through EC, and ER based on stakeholder theory and institutional theory which were previously ignored in earlier research. It expands the foundational understanding of ECSR at the micro-level and enriches the literature on environmental management. The findings expand the significance of ECSR within the area of EP research. Meanwhile, managers can use ECSR, EC, ER to enhance environmental performance.

Literature Review

Theoretical Foundation

Stakeholder theory (ST) posits that the prosperity of a company hinges on its effective management of the diverse relationships it maintains with its stakeholders. The term "stakeholders," initially coined by the Stanford Research Institute, pertains to "those groups without whose support the organization would cease to exist" (Freeman, 2010). Considering this perspective, the traditional belief that a company's success relies solely on maximizing shareholders' wealth falls short, as the organization is seen as a web of explicit and implicit agreements between the company and its diverse stakeholders (Jensen & Meckling, 1976). ST says firms not only influence society, but influence goes beyond their stakeholders. One of the main strengths of ST is its ability to provide a comprehensive view of an organization's relationships with various stakeholders (Freeman, 2010). It acknowledges that businesses have responsibilities beyond shareholders and considers the interests of employees, communities, customers, and the environment (Donaldson & Preston, 1995). It offers tools for identifying and prioritizing key stakeholders (Clarkson, 1995). This helps organizations focus their corporate social responsibility efforts on those with the most significant impact on corporate social responsibility outcomes. It has played a pivotal role in integrating corporate social responsibility into management practices, highlighting the importance of social and environmental responsibility (Donaldson & Walsh, 2015). It highlights the role of stakeholder engagement in driving

organizational performance. Businesses that actively engage with stakeholders tend to exhibit better EP (Mitchell *et al.*, 1997). Stakeholder theory says that businesses should be environmentally committed regarding their environmental concerns. Regarding resolving environmental concerns, the stakeholders' perspective implies that firms should demonstrate a commitment to environmental protection (Chang *et al.*, 2015; Lindblom & Ohlsson, 2011). Researchers argue that businesses require sustainable practices and can be actable through environmental commitment.

How societal pressures for conformity impact the behavior of organizations is the central concern of institutional theory (DiMaggio & Powell, 2010; Scott & Scott, 2004). The general public believes organizations are susceptible because they want everyone's blessing. Organizations strive to maintain or increase their legitimacy. Consequently, businesses are driven to embrace socially beneficial practices within an institutional setting due to concerns about their legitimacy (Deephouse & Carter, 2005; Scott & Scott, 2004). Institutional theory avoids discussing efficiency issues and the impact of strategic decisions on company performance since profit is not the primary driver of socially responsible management practices (Berrone & Gomez-Mejia, 2009). Because of this feature, the theory has been quite attractive to researchers in environmental management (Sharma & Vredenburg, 1998). There needs to be more understanding of the factors that cause some companies to pursue environmental performance more than others and, more crucially, the conditions under which companies do so, even though researchers claim that there is broad consensus about the social importance of EP. We contend, with support from the findings of institutional theory and the literature on EP, that increased regulatory requirements make it more appealing for businesses to participate in EP.

Hypotheses Development

ECSR and Environmental Performance

Corporate social responsibility encompasses an integral and unique component known as ECSR. It was observed that U.S. companies exhibit greater corporate social responsibility engagement and enjoy superior resource accessibility compared to businesses in other countries (Baughn *et al.*, 2007). When compared with other nations, U.S. corporations demonstrate reduced ECSR involvement. In simpler terms, high corporate social responsibility does not necessarily equate to a high level of ECSR (Ko *et al.*, 2018). ECSR considers a company's environmental footprint, encompassing its products, operations, and infrastructure. Efficiency and performance are optimized by reducing energy waste and carbon emissions, along with decreasing resource usage to minimize the impact on society. ECSR entails taking environmentally responsible actions that comply with ERs and acknowledge accountability for any adverse external effects resulting from their operations (Portney, 2008). These measures represent a sequence of actions aimed at reducing the environmental impact generated by businesses within the framework of corporate ecological responsibility (Raza *et al.*, 2023). Strategies to diminish a company's environmental footprint

include product distribution, decreased energy consumption, and efficient resource utilization (Farooq *et al.*, 2023; Mahmud *et al.*, 2023; Yin *et al.*, 2021). ECSR denotes the approach employed by businesses to oversee emissions. It encompasses market mechanisms like carbon dioxide emissions and collaborative initiatives implemented by companies, such as renewable energy strategies. ECSR also encompasses the eco-initiatives of individual organizations and the prevention or mitigation of adverse environmental outcomes resulting from business activities (Brachle & Waples, 2022). It was claimed that ECSR exerts a significant influence on both the EP and the competitive standing of companies.

Stakeholder theory says that while making strategic choices, businesses should consider the interests and expectations of a wide range of stakeholders, including shareholders, creditors, consumers, workers, suppliers, regulators, and communities (Freeman, 1994). How businesses manage their environmental performance is a strategic decision (Schaltegger & Wagner, 2006). The term "ECSR" refers to the actions taken by a corporation to reduce the negative effects on the environment and to encourage sustainable practices. From the point of manufacturing through to the point of distribution and disposal of goods, it entails accepting responsibility for the firm's acts and ensuring that they are ecologically responsible (Flammer, 2013). An organization may demonstrate its commitment to decreasing environmental impact, complying with environmental regulations, and contributing to environmental causes by embracing ECSR. This allows the organization to satisfy stakeholders' expectations about the environment. Consequently, on the basis of the writings made above, we hypothesized.

H1: ECSR has a significant impact on Firm Environmental Performance.

Mediating Role of Environmental Commitment

In addition to investigating the relationship between ECSR and EC to environmental initiatives, we also investigate the relationship between ECSR and EP. Prior studies have explored the association between ECSR and EP (Chuang & Huang, 2018; Luo & Qu, 2023). However, a recent review by (Luo & Qu, 2023) on this topic has emphasized the need for increased exploration of the relationship between ECSR and EP and a focus on the mediating mechanisms in this relationship. To address these research gaps, we contend that EC to environmental matters mediates the associations between ECSR and FEP.

EP refers to how well organizations meet and surpass societal expectations concerning the natural environment (Chen *et al.*, 2015; Mui & Chan, 2005). EC requires a feeling of responsibility for the environmental cause; therefore, an employee's environmental commitment and EP seem linked (Meyer & Herscovitch, 2001). This commitment also guides employees' subsequent actions, such as engaging in environmental citizenship behaviors (Raineri & Paille, 2016) and voluntarily participating in pro-environmental activities (Bissing-Olson *et al.*, 2012). These behaviors, in turn, facilitate the achievement of the organization's overarching objectives (Meyer & Herscovitch, 2001). Chen

et al. (2015) provided empirical validation for this reasoning and demonstrated a positive correlation between employees' environmental engagement and EP.

According to stakeholder theory, businesses can benefit from engaging in ECSR, which can enhance their reputation and loyalty among their stakeholders and thus improve their EP (Yankovskaya *et al.*, 2022). ECSR is a response to the stakeholder pressure, both internal and external that motivates

firms to adopt EC as a strategic orientation that guides their actions and policies (Delmas & Toffel, 2004). EC, in turn, leads to improved EP as firms seek to reduce their environmental impact, enhance their reputation, and gain competitive advantage (Luo & Qu, 2023). Consequently, we propose that:

H2: Employees environmental commitment mediates between ECSR-EP.

Table 1

Literature Review

Study	Context	Predictors	Outcomes	Findings
(Lu & Qu ,2023)	Chinese Multinational Corporations	Environmental CSR	Environmental Performance	The results show the higher the level of environmental CSR practices in organization will lead to better environmental performance.
(Chuang & Huang, 2015)	Taiwan Manufacturing Industry	Environmental CSR and Green IT capital	Environmental Performance and Business Competitiveness	The empirical results show environmental CSR is predictor of environmental performance and business competitiveness.
(Ren et al., 2022)	Eastern Chinese companies	Green human resource management, Environmental Commitment	Environmental Performance and financial performance	Environmental commitment mediates between GHRM-EP and GHRM-FP.
(Wu et al., 2020)	China private enterprise survey	Regulatory pressures Political connections	Green innovation	Regulatory pressure spurs the green innovation, the more environmental regulatory pressures bound to companies that actions should be environmental friendly.

Moderating role of Environmental Regulation

Environmental regulation (ER) denotes the application of national environmental standards by government departments, which exert stringent oversight and control over enterprises' environmental pollution activities (Tang *et al.*, 2020b). The primary objective is to mitigate environmental pollution and enhance the overall quality of the environment. These agencies work diligently to ensure that businesses adhere to responsible environmental practices, contributing to a cleaner, healthier, and more sustainable environment for the well-being of society and the planet (Suchman, 1995). Government policies serve as mechanisms for overseeing and directing firms' environmental management practices, reflecting institutional pressure. Constrained by these regulations, businesses invest in sustainable initiatives, embrace cleaner technologies, and proactively manage their environmental footprint (Wu & Tham, 2023).

There are many different political and economic organizations that corporations are a part of, and these institutions affect the conduct of corporations (Campbell, 2007). The institutional theory examines how societal pressure impacts the organization's actions (Berrone *et al.*, 2013). Institutionalists believe that institutions outside of the market are essential to guarantee that businesses are responsive to their stakeholders and provide for their own needs (Campbell, 2007).

It is more interesting for a company to participate in environmentally friendly activities when there are more regulatory constraints (Berrone *et al.*, 2013). Strict environmental regulations can potentially compel businesses to engage in responsible actions, such as actively participating in environmental practices and investing in environmentally friendly technology (Wu *et al.*, 2020). The Chinese government is now establishing more stringent environmental regulations to respond to China's significant environmental pollution and ecological damage over the last three decades (Du *et al.*, 2014). Furthermore, the new Environmental Protection regulation of China, which was introduced in 2015 and is considered to be the most stringent in the history of the world, encourages businesses to be more conscious of the environmental conduct they engage in or else they would be subject to severe penalty (Wong *et al.*, 2018).

Companies that are required to implement ERs increase their efforts to engage in ECSR (Tamvada, 2020). In this paper, we claim that businesses are beginning to become more worried about environmental issues due to more stringent regulations, and they are also beginning to take active measures to become more environmentally responsible and enhance their EP. Therefore, there is a high degree of EP since businesses are required to use cleaner technology and adhere to environmentally friendly goods. The above arguments help to create a hypothesis, which:

H3: The environmental regulation strengthens/weakens the relationship between ECSR-EP.

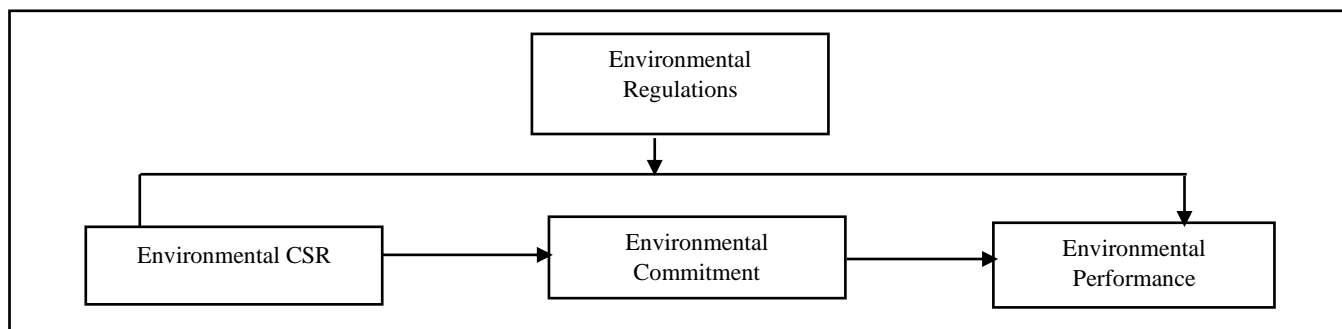


Figure 1. Research Model; Source (self-developed by the researcher)

Materials and Methods

Measurement Design

This study used a 5-point Likert scale to gauge the respondents' responses. The researcher assured the respondents that no personal information would be obtained through the questionnaire; this information would be purely used for the study. The respondents are free to tick any answer they feel is correct. No answer would be considered wrong. The language used in the questionnaire was Chinese because our respondents were Chinese. We translated the questionnaire using the back translation technique suggested by Bhalla and Lin (1987).

The questionnaire comprised two sections. The first section was related to demographic profile; the second comprised constructs items. Four variables were used in this study. ECSR was measured by using four items developed by Turker (2009). EP was measured using seven items, and the scale was developed by Daily et al. (2007) and Melnyk et al. (2003). EC was measured using eight items from Allen & Meyer (1990) and Herscovitch & Meyer (2002). ER was measured by using four items scale developed by Wang et al. (2018).

Sampling

Our study was carried out using a sample population comprised of workers in the manufacturing industry in China. Our sample included employees from manufacturing companies with a workforce of more than ten individuals in various regions across China, including Shanghai, Shenzhen, Suzhou, and Ningbo. The majority of survey participants hail from these cities, known for their well-developed economic zones and reputation for significant pollution emissions (Li & Zhang, 2014). We focused our study on China's manufacturing industry due to its widely recognized history of environmental underperformance (Li & Zhang, 2014). China falls significantly short of meeting the air quality standards recommended by the World Health Organization, with fewer than 1 % of its major cities in compliance. Alarmingly, seven of China's cities are listed among the top 10 most polluted cities worldwide (Development Bank, 2015).

China's swift industrial expansion in the past three decades, marked by significant growth in the manufacturing sector, has led to a substantial surge in pollution, giving rise to the environmental challenges the country faces today (Li & Zhang, 2014). In response to public concern, the Chinese government has implemented rigorous regulations to reduce the concentration of inhalable particulate matter to below 10 % by 2017. Additionally, they have urged manufacturing companies to reduce coal consumption, adopt environmentally friendly practices, and eliminate significant sources of pollution (Li & Zhang, 2014).

Data Collection

We collected the data using a survey questionnaire, a widely accepted and established tool in social science research for acquiring insights, information, and perceptions regarding customary attitudes and behaviors (Bulmer, 2016). The questionnaire items were derived from pertinent literature. One of the merits of using the survey method is its flexibility in encompassing a broad geographic scope (Cooper & Schindler, 2014). Of the participants, 48 % held senior and midlevel management positions, while the remaining 52 % were operational employees. This sample aligns effectively with our study, encompassing viewpoints from managerial and operational staff across various organizational departments. The survey instrument was purposefully crafted to assess the four principal constructs of our research: ECSR, EC, ER, and EP. Before distributing the questionnaire, the content validity was checked by taking the expert opinion. Data was gathered between 07 Oct 2023 to 5 Jan 2024. We use convenience sampling to disburse the questionnaires among respondents. Utilizing a convenience sampling approach guarantees that respondents are easily accessible, available at a given time, and willing to participate (Cheng & Dornyei, 2007). The sample size was determined using the approach of (Costello et al., 2005), who suggest a 20:1 ratio per item. This suggestion makes a 460 sample size. We received 354 valid responses to 560 questionnaires, and 106 responses were incomplete answers, representing a response rate of 76.95 %.

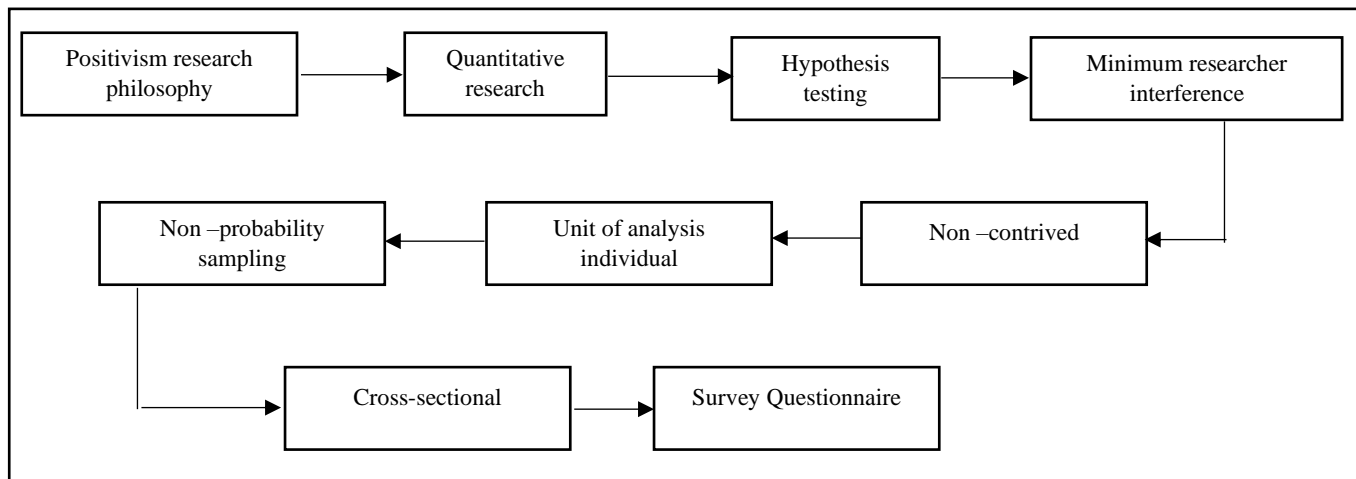


Figure 2. Graphical Representation of Research Design

Results and Discussion

We conducted descriptive statistics and correlation analysis using SPSS 21. For structural equation modelling (SEM), we employed AMOS 21, a well-regarded and widely utilized statistical software for conducting Confirmatory Factor Analysis (CFA) and SEM. In the data screening phase, we assessed missing data, identified multivariate outliers, checked for normality, and examined multicollinearity and common method biases.

Primarily Analysis

In the primarily section, we found 17 missing values and removed these responses from the data set recommended by Sekaran & Bougie (2019). For outliers, the Mahalanobis distance procedure test was performed (p<0.00), and resultantly, we deleted 9 responses suggested

by Kline (2015). To assess data normality, kurtosis values (within ±3) and skewness values (within ±1) were examined, as per the recommendations by Byrne (2007). To mitigate the influence of common method bias (CMB), our study implemented various procedural and statistical measures recommended by Podsakoff et al. (2003). The results of Harman's single-factor analysis revealed that single-factor variance was 30.80 per cent, below the standard value of 50 %, hinting that there are no biases in the data (Podsakoff *et al.*, 2003). We used the variance inflation factor (VIF) indicator to assess multicollinearity. VIF values are considered acceptable when below 5 (Hair, 2009). In our findings, the VIF scores fell within the range of 1.17 to 1.42, signifying the absence of multicollinearity concerns.

Reliability and Correlation Analysis

Table 2

Reliability and Correlation Statistics

Variables	Cronbach alpha	1	2	3	4
Environmental corporate social responsibility (ECSR)	0.734	1			
Environmental Performance (EP)	0.860	0.427**	1		
Environmental Commitment (EC)	0.842	0.454**	0.524**	1	
Environmental Regulation (ER)	0.894	0.187**	0.535**	0.383**	1

Correlation is significant at the 0.01 level.

The fact that the constructs' Cronbach's alpha values were more than 0.70, which was greater than the suggested criterion of 0.7(Nunnally, 1978), indicated that these scales had an adequate level of reliability. All the variables have high level of reliability, environmental Corporate social responsibility (α = 0.734), environmental performance (α = 0.860), environmental commitment (α = 0.842) and

environmental regulation (α = 0.894). Table 2 also indicates the correlation between constructs. ECSR has a significant association with EP (r = 0.427, p < 0.01), EC (r = 0.454, p < 0.01). and ER (r = 0.187, p < 0.01), respectively. All other associations between constructs are given in Table 2.

Measurement Model

Table 3

Validity Statistics

Variables	Factor Loadings range	CR	AVE	1	2	3	4
Environmental Commitment (EC)	0.553-0.901	0.872	0.541	(0.735)			
Environmental Regulation (ER)	0.780-0.876	0.896	0.683	0.390	(0.827)		
Environmental Performance (EP)	0.508-0.896	0.875	0.590	0.353	0.582	(0.768)	
Environmental CSR(ECSR)	0.720-0.762	0.780	0.543	0.296	0.172	0.398	(0.737)
CMIN/DF= 3.045 CFI= 0.930 GFI= 0.896 TLI= 0.915 RMSEA= 0.076							

Note: CR= Composite reliability, AVE= Average variance extracted, diagonally parentheses () bold values show AVE's square root.

Furthermore, the confirmatory factor analysis (CFA) was performed because the measures were adapted from previous studies (Anderson & Gerbing, 1988). We utilized several fit indices recommended by Byrne & van de Vijver (2010) to evaluate the goodness of fit of our model, including CMIN, RMSEA, CFI, and GFI. As per the guidance of Hair (2009) and Kline (2015), a well-fitting model is characterized by CFI and TLI scores exceeding 0.90 and an RMSEA value below 0.08. Our results demonstrated that the model fit was true with CMIN= 3.045, CFI = 0.930, TLI = 0.915, GFI= 0.896 and RMSEA = 0.076, which indicates the model is a good fit and can proceed to further analysis.

Our evaluation of the measurement model tests for convergent and discriminant validities recommended by Hair (2009). To prove convergent validity, we checked

factor loadings that were greater than 0.5 of the individual construct, and the average variance extracted (AVE) was greater than 0.50. Reliability was assessed using the criterion of composite reliability (CR) exceeding 0.70. Table 3 indicates that all the values fall within the range described above criteria. We evaluated discriminant validity by comparing all variables' correlations with the square root of AVE for all constructs, following the approach by Fornell & Larcker (1981). As indicated in Table 3, the square root of AVE surpassed the correlations between variables, confirming good discriminant validity. The results in Table 3 demonstrate that all the scales employed in our study are reliable and valid, meeting the criteria mentioned.

Structural Model

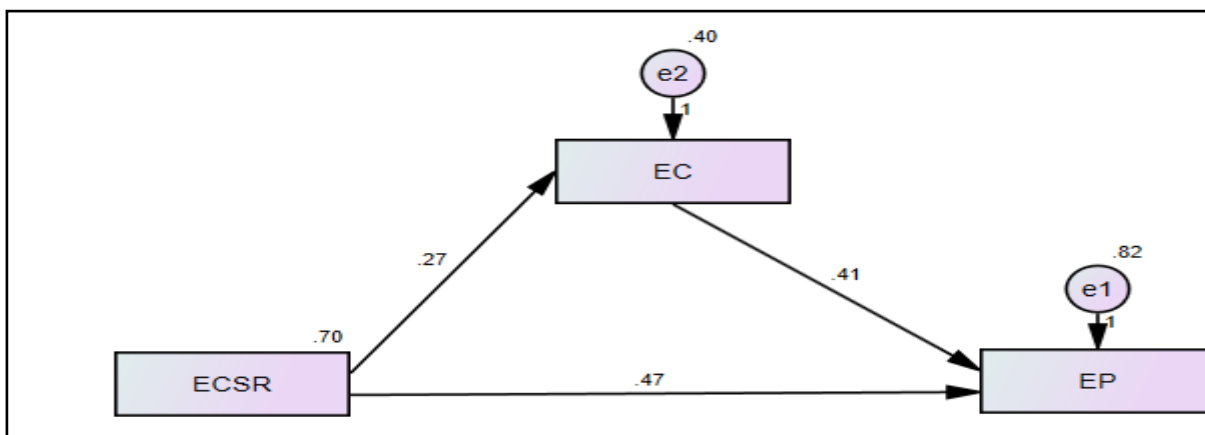


Figure 3. Structural Model

Table 4

Hypothesis Testing Results

Model fit indices:					
CMIN/DF= 3.886	CFI= 0.923	GFI= 0.905	LLCI	ULCI	RMSEA=0.090
Hypotheses					
	β	p-values	LLCI	ULCI	Decision
Direct effect					
ECSR→EP	0.466	***	0.306	0.667	Supported
Indirect effect					
ECSR → EC→ EP	Direct beta w/o mediation 0.399***	Direct beta with mediation 0.323***	Indirect effect 0.076***		LLCI ULCI 0.033 0.143 Supported
Moderation analysis:					
ECSR → ER→EP	β -0.257	p-values ***	LLCI -0.329	ULCI -0.191	Decision Supported

Note: ***p < 0.001, ECSR= Environmental corporate social responsibility, EP=Environmental Performance, EC= Environmental Commitment, ER= Environmental Regulation

The results are depicted in table 4. Hypothesis 1 postulated a positive relationship between ECSR and EP. The structural model results revealed a path coefficient of 0.466 between ECSR and EP, which was statistically significant at the 0.001 level. Thus, Hypothesis 1 was supported. In this study, the second hypothesis suggests that EC acts as a mediator between ECSR and EP. The results of this hypothesis are given in Table 4, which indicates that an indirect effect exists showing the value 0.046, significant at

0.001. Thus, h2 is accepted. Our study included a moderation analysis, focusing on Hypothesis 3, which posited that ER would moderate the relationship between ECSR and EP. As illustrated in the findings presented in Table 4, the results indicate that ER had a negative moderating effect on the relationship between ECSR and EP, with the interaction term being -0.257 and the p-value being less than 0.001. This result provides support for Hypothesis 3.

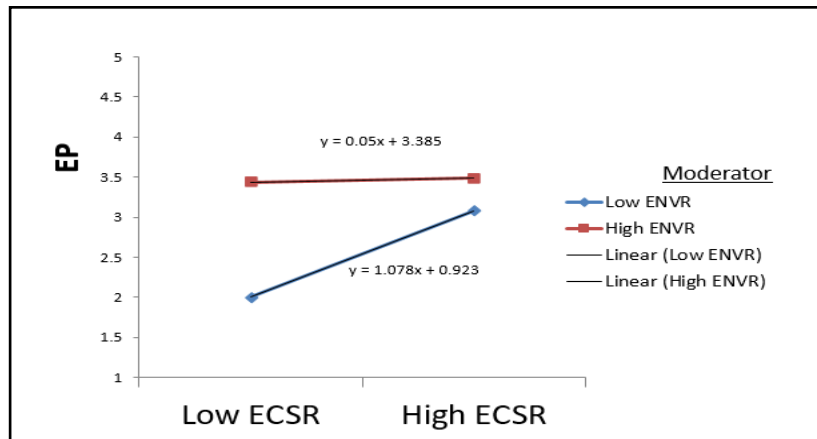


Figure 4. Moderation Graph

In the present study, we operate under the assumption that ECSR positively influences a company's EP, in line with the stakeholder theory hypothesis. Additionally, we investigate the potential mediating effect of EC in the relationship between ECSR and firm EP. Furthermore, we explore the moderating role of ER in the association between ECSR and EP. The results from the current study affirm the validity of hypothesis 1, suggesting that ECSR indeed enhances a company's EP. These outcomes align with earlier research findings (Farooq *et al.*, 2023; Mahmud *et al.*, 2023), suggesting that ECSR is a central component in addressing environmental awareness and is acknowledged as a pivotal factor in enhancing the EP of the company.

In addition, the findings of this research indicate that the EC plays the role of a mediator in the connection between an ECSR and an EP. This verifies that hypothesis 2 is accepted. This study is novel as there is no study has been conducted yet, to our best knowledge, to check the mediating role of EC between ECSR and EP. This result aligns with stakeholder theory, which posits that by making a dedicated EC, a company signals its intention to meet various stakeholders' environmental concerns and expectations. This commitment then guides the company to implement specific environmentally sustainable practices and policies, ultimately leading to improved EP. ECSR involves reducing carbon emissions, resource conservation, and eco-friendly product development. However, without EC from the firm, these efforts may remain superficial. When a company is genuinely committed to these initiatives, it is more likely to implement CSR activities effectively, leading to improved EP.

The evidence gathered and analyzed for hypothesis 3 showed that ER acts as a moderator in a way that is negative to the link between ECSR and EP. As a result, hypothesis 3 is confirmed. It has been seen that ER weakens the relationship between ECSR and EP. In the case of Chinese companies, it has been observed that they might not react positively to regulatory pressures, primarily due to their strong emphasis on commercial success. Consequently, they may downplay their environmental responsibilities (Despite, 2013). Chinese companies may employ various strategies to either comply with ERs or circumvent regulatory pressures (Despite, 2013) and consequently, the implementation of ECSR practices does not give a boost to EP. The results align with institutional theory, which posits that organizations are influenced by

institutional pressures, including regulatory frameworks. In this context, the negative moderation effect of ERs reinforces the idea that organizations respond to external pressures, such as legal requirements, when engaging in ECSR activities. This finding provides empirical support for the applicability of institutional theory in explaining the interplay between regulatory environments and corporate environmental behavior.

Conclusion and Policy Implications

Conclusion

The findings of this study indicate that the positive correlation between ECSR and EP emphasizes the significance of environmentally responsible practices in enhancing a firm's environmental performance. This suggests that companies actively engaging in ECSR can achieve better environmental outcomes, reflecting the growing importance of integrating environmental considerations into corporate strategies. The study also highlights the mediating role of EC in the ECSR-EP relationship. The result implies that firms committed to environmental sustainability are more likely to translate their ECSR into environmental performance improvements. This finding reinforces the stakeholder theory, which posits that organizations must demonstrate environmental commitment to achieve sustainable performance. The role of EC as a mediator adds depth to our understanding of how ECSR can drive EP, suggesting that internal commitment is a crucial step for firms aiming to enhance their environmental impact.

Moreover, the research examines the moderating effect of ER on the ECSR-EP relationship. The results indicate that stringent environmental regulations can alter the impact of ECSR on EP. Specifically, strict ER tends to weaken the positive effect of ECSR on EP. This finding aligns with institutional theory, which asserts that regulatory pressures can influence organizational behavior. The negative moderation effect suggests that while ER is essential for ensuring compliance and fostering environmental practices, it may also impose constraints that could limit the effectiveness of ECSR initiatives.

This study, like many other studies in the social sciences, includes limitations that hint at exciting new avenues for

research. In the first place, the limited scope of the sample raises questions about the extent to which the findings may be generalized. When doing further research, using a bigger sample size can help ensure more reliable findings. To gather data for this research, a questionnaire was used. In the future, there may be opportunities to conduct a qualitative research. This research was conducted specifically in Chinese context; its findings are only relevant to this particular geographic area. Future research might strive to widen the scope of the study by looking at different contexts to improve the dependability of the results and their broader scope. In this existing research, the primary emphasis was placed on determining whether or not an FEP is affected by ECSR, with EC as the mediating variable. In future studies, other mediating variables could be incorporated to deepen our comprehension that might have an effect on FEP. The present research draws to a close by hypothesizing about the moderating effect of ER. To give further validation for the results of this study, it would be interesting for future research to include more moderating variables, such as organizational environmental strategies.

Practical Implications

General managers, business professionals, and legislators may all benefit significantly from the findings of our research since they have substantial consequences. The purpose of our study approach is to provide guidance to major manufacturing companies to help them understand the impact that ECSR, EC and ER have on the execution of EP. General managers and policymakers are increasingly focusing their attention on EP in today's world. In the meanwhile, they may make use of the study methodology that focuses on EP in developing economies. A number of researchers have confirmed that corporate social responsibility (CSR) significantly improves organizational performance (Long et al., 2020; Orzalin, 2020). As a result of the findings, it is clear that ECSR has a direct influence on EP. As a result, general managers of large manufacturing organizations cannot ignore ECSR when it comes to measuring EP. A further relevance for managers might be with relation to ER, namely the conditions under which implementation of the regulation need to take place. Although rules play a significant part in determining the behaviour of corporations, regulations that are too restrictive may unintentionally impede the good benefits that corporate social responsibility efforts have. Policymakers must to take into consideration the possibility of establishing regulatory regimes that, rather than impeding attempts to promote corporate social responsibility, support and complement such efforts. Rather than just complying

with environmental requirements, organizations should establish long-term sustainability plans that go beyond this.

Theoretical Contributions

It is necessary to have certain sorts of research results in order to make a theoretical contribution. These findings should be able to provide unique insights into a phenomenon that is considered to be essential for the improvement of organizational value. The empirical data on ECSR, EC, ERs, and EP, as well as the numerous contributions to practitioners, scholars, and policymakers, are the basis for our study, which provides an additional unique perspective. Therefore, it makes a contribution by identifying the relationship between ECSR and EP, considering the role of EC as a mediator and the role of ER as a moderator.

Therefore, it makes a contribution by identifying the relationship ECSR and EP, taking into account the role of EC as a mediator and the role of ER as a moderator. Therefore, our research is a pioneering study that includes ECSR, EC, ER, and EP into a single research model. As a result, our study provides substantial contributions to these fields. Earlier academics used the ability–motivation–opportunity theory and the contingency theory to the study of corporate social responsibility and firm performance. In addition, the researchers used natural resource base theory in order to investigate the connection between environmental strategy and the environmental performance of organization (Latan et al., 2018). In light of stakeholder theory, this research makes a contribution to the existing body of literature by attempting to identify the relationship between ECSR, EC, and EP. By investigating the ways in which ECSR, EC, and ER influence the EP of the manufacturing sector, this study contributed to the expansion of research on EP.

Second, to the best of our knowledge, this is one of the very few pieces of research that investigates the moderating influence of environmental regulation in the light of institutional theory; nonetheless, organizations should take into consideration the level of difficulty of the rules before putting them into practice. Even though institutional theory asserts that institutional pressure has an impact on ECSR and the organization's ability to meet the external environment, the presence of stringent environmental rules impedes the advancement of the environmental performance of the organization. Under these circumstances, corporate social responsibility (CSR) may become less effective or even harmful to the success of the company. This is because it may distract resources and attention away from the primary operations of the organization or generate trade-offs between social and economic goals.

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