Humanities & Social Sciences Communications

ARTICLE

https://doi.org/10.1057/s41599-023-01799-4 OPEN

Toward a new understanding of environmental and financial performance through corporate social responsibility, green innovation, and sustainable development

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The study's primary objective is to advance the environmental management research field by examining the relationship between corporate social responsibility (CSR), environmental and financial performance while considering the mediating effect of sustainable development and green innovation. In addition, the study also analyzes the moderating effect of green innovation actions and green innovation strategies. Employees in the manufacturing sector in Pakistan completed a self-administered survey. Data gathered from 497 employees was analyzed using the structural analysis. The study results show that corporate social responsibility to the environment (CSREM), corporate social responsibility to employees (CSREM), to the community (CSRCO), and to the consumers (CSRCO) positively influences environmental performance (EVP) and financial performance (FP). Environmental sustainable development (ESD) and green innovation (GI) mediate the relationship between CSR, environmental, and firm financial performance. Green innovation strategies (GINS) and green innovation actions (GINAs) moderate the relationship between a firm's environmental and financial aspects. The study deepens the understanding of CSR through an integrated model of mediator and moderator variables. It attempts to boost the firms' performance (i.e., environmental, and financial) by applying the concept of green innovation and sustainable development. This study brings significant results for manufacturing firms, managers, entrepreneurs, policymakers, practitioners, employees, and other stakeholders. The study's outcomes make the stakeholders adopt CSR consideration to achieve ecological and financial harmony in developing economies.

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Introduction

Despite all the endeavors made by global environmental bodies, businesses are still contributing to land depletion. As a result, today, climate change has become a global issue affecting the world's economies. Extraordinary temperature changes (e.g., heat waves) and excessive waste emissions (e.g., pollutants, intoxicants, poisonous emissions) have caused a severe threat to ecological biodiversity, thereby making countries worry about emerging environmental consequences. (Salem et al. 2018).

Therefore, given the increasing environmental concerns, CSR has emerged as a strategic need for businesses to achieve ecological sustainability (Anser et al. 2018). Corporate social responsibility (CSR) is a unique tool providing a safe business environment to nations (Ikram et al. 2019). It is a fundamental phenomenon that engages companies in eco-friendly activities, thus bringing benefits to the stakeholders. Thanh et al. (2021a) state that CSR promotes the voluntary implementation of socio-environmental activities towards the environment, society, and economy. This growing significance of CSR consolidates the social, economic, and ecological viewpoints into a firm's strategy, subsequently building up a strong association with firm stakeholders (e.g., internal and external) (Svensson et al. 2018).

The manufacturing industry is a dominant waste-producing sector impacting global environmental quality. Rising natural challenges have caused the manufacturing industry to experience intense pressure from its stakeholders (e.g., customers, society, employees, and government) regarding the goal of environmental sustainability through resource-friendly practices (i.e., CSR). Environmental regulations provide the organization with the opportunity to achieve a win-win situation (Chan et al. 2018). The natural guidelines reduce waste material by maintaining air quality (Raza et al. 2020). In support of this notion, the researcher reveals that CSR alluding to the firms' sustainable economic unit, today lacks practice, especially in emerging nations (Ansu-Mensah et al. 2021). CSR is a popular concept that forms the core of every business. However, limited attention has been paid to developing nations regarding its adoption (Butt et al. 2020). Similar to Rehman et al. (2023) research, our study examines the Pakistan economy, where CSR has started to be perceived by most corporations. Today, Pakistanis SMEs are profoundly managing the resources that are necessary for the successful implementation of CSR. Pakistan manufacturing businesses are gradually proceeding toward socially responsible practices, following China's lead (Anser et al. 2018). One study performed in the manufacturing sector of Pakistan indicates that CSR activities have reduced environmental damage by reducing production waste, which in turn reduces manufacturing costs.

Indeed, CSR proposes a responsible, effective, and sustainable business model that acknowledges the value of the stakeholder (i.e., customers), influencing the firm's economic performance (Child 2019). The literature highlights the stakeholder orientation in the context of the CSR frame as a requirement of sustainable performance (Żelazna et al. 2020). In this matter, this study analyzes the fundamental relationship between CSR and stakeholder (e.g., employees, community, and consumers) valuing of EVP and FP.

Significantly, in recent years, global climate changes have forced countries to act toward environmental safety. Pakistan, subjected to a high risk of environmental threats today, adopts green innovation as the prime priority. CSR activities enable firms to incorporate eco-friendly practices, thereby fulfilling the social needs of the stakeholders (i.e., a hazard-free atmosphere) through integrating green practices (i.e., green innovation) into the firm's business operations. Green innovation (GI) is a strategic catalyst used by firms to accomplish substantial development through energy savings, pollution reduction, and waste recycling. GI refers to modified products and processes that integrate organizational innovation (i.e., technology, managerial) into a firm's strategy (Ilvitskaya and Prihodko, 2018). GI is an essential driver influencing firm performance. The technical improvement of GI improves EVP, subsequently achieving ecological sustainability (González-Fernández and González-Velasco 2018). Sustainable development backed by GI allows companies to accomplish significant economic benefits, thereby ensuring robust EVP (Popescu and Popescu 2019).

A broader perspective on sustainable development (i.e., CSR) is needed to balance the growing environmental issues. Concerning this growing need today, organizations are increasingly focusing on their socio-ecological practices. However, in contrast, Ahmad et al. (2021) show that the SMEs of Pakistan are still in their initial stage of implementation. With the rapid growth in Pakistan's economic development, adverse results had found to influence the firms' performance. Hence, to fill this commitment, stakeholders must join hands toward achieving economic, social, and ecological sustainability.

Furthermore, the prior study shows that besides the increasing significance of environmental sustainability, the literature scarcely deals the relationship between CSR practices and GI within emerging economies (Awan et al. 2019). Society benefits depending upon the firms' green capabilities and sustainability of the environment (Rehman et al. 2022). Hence, this notion reinforces a need for empirical research on CSR and firms' performance with the mediation effect of sustainable development and green innovation. This prevailing literature gap motivated the researchers to undertake this study highlighting the benefits of CSR in the context of green practices. Considering the research gap and the crucial role of Pakistanis SMEs in the manufacturing industry, this research is a novel initiative toward the firms' performance and sustainable development.

The empirical results show that CSR affects the two measurements of firm performance, namely, EVP and FP. The previous literature states that ESD and GI significantly mediate the relationship between CSR practices and corporate performance. Primarily, this study uses a moderated serial mediation model to understand the relationship between the variables (i.e., dependent, and independent). The study explores the importance of CSR concerning stakeholders. In addition, the study examines the effect of CSR considering the natural resource-based theory (i.e., NRBV). It alleviates the responsible practices of stakeholders while exploring the mediating role of ESD and GI as a fundamental perspective guiding the firm's performance (Akram et al. 2022). Moreover, it advances knowledge by illustrating green innovation practices (i.e., GINS, GINAs) as potential variables, moderating a deeper understanding of this phenomenon (i.e., CSR).

Therefore, this study adds to the literature on stakeholder CSR practices while providing an opportunity to consider the role of ESD and GI in the context of CSR. This research explores in detail the correlation between Corporate Social Responsibility (CSR) and the performance of firms, with a specific focus on the context of Pakistan. In addition, the study identifies the most important influencing variables that play a role in ensuring the firms' environmental performance and sustainability. Our research is the first to incorporate a moderated serial mediation model that investigates how stakeholders view green innovation from a responsible perspective (i.e., strategies and action), firm performance (e.g., environmental, and financial), and sustainability development. This study offers significant implications for global firms in addition to bridging the research gap.

Specifically, this study contributes to future research regarding CSR practices in developing countries, while identifying ESD and

GI as crucial factors influencing EVP and FP. This study provides policymakers and professionals with valuable insights into how CSR practices can be applied to achieve environmental sustainability. Furthermore, this study will provide top management and employees with a practical guide, which will motivate them to implement CSR initiatives. It will help enterprises to act ethically toward addressing environmental issues and problems. Furthermore, it enables the business stakeholders to take a more positive view of CSR contributions, thus enabling them to become more responsible towards society.

The paper is structured into the following sections: Section 2 outlines the key concepts concerning the previous studies. While Section 3 describes the research methodology, and Section 4 interprets the study results. Lastly, Section 5 discusses the hypotheses in light of the prior findings, and Section 6 concludes the study by stating the study implications, limitations, and prospects for future research.

Theoretical background and hypothesis development

Natural resource based theory. The natural resource-based theory (NRBV) alludes to a company gaining a competitive advantage based on the natural environment (Hart 1995). Concerning the new management concept, the NRBV allows the company to identify the firm's environmental capabilities that form an integral part of the organization's core system. Environmental performance, green innovation, and sustainable development are underlying mechanism that ensures natural well-being. These capabilities help to minimize the ecological burden that has a significant impact on the company's reputation and advantage. In this regard, this concept of NRBV focus on meeting the socio-environmental need of the future generation (Mohamed et al. 2022). It makes resources capabilities to create a superior advantage (Ferraris et al. 2022), fundamentally understanding how the natural environment can affect the firms' operations and sustainability (Rehman et al. 2021). Moreover, it enables the firms to improve business performance and innovation and makes the stakeholders a focal point of every activity (Andersén 2021).

Environmental and social issues are extensively growing in developing economies. Hence, the framework proposed in this study is of great value as it makes individuals understand the role of the NRBV theory in the manufacturing sector. The current study supporting the NRBV approach grounds key factors that constitute the foundation of firms' environmental capabilities. The NRBV theory addresses the ecological concerns of the stakeholders. It encourages companies to minimize the environmental impact and forecast future trends, thus leading to a competitive advantage. It makes the organizations establish a strong market position, thereby transiting towards sustainability. Also, it helps the firms visualize the need for environmental sustainability and green innovation capabilities. Green innovation can be a valuable resource that may lead companies to gain an enduring advantage (Khanra et al. 2022).

Therefore, investigating this model under the light of NRBV theory will enable the firms to differentiate their offerings by gaining long-term market development. Significantly, it will help manufacturing firms gain continuous improvement in performance through the integration of the stakeholder perspective. Moreover, it will lead the firms to redesign and reduce the liability of environmental hazards affecting companies' environmental and financial performance. To sum up, the integrations investigated under this framework (e.g., green innovation, sustainable development, EVP, and FP) has the potential that ensures firms' success concerning the competitors.

Corporate social responsibility. Socio-environmental challenges have gained considerable advancements in today's world, where CSR affects global societies (Cheema et al. 2020). CSR is an instrumental concept defining the firms' economic, legal, and ethnic commitments toward society. Simultaneously, CSR also maximizes the stakeholders' value by fulfilling the societal needs of the global communities (Svensson et al. 2018). In addition, environmental CSR refers to organizations intentionally conducting business activities, thereby recording a positive effect of CSR on business performance. CSR forces the organization's entities to pursue socio-environmental responsibility by considering the ecological ramifications of business activities such as environmental pollutants (e.g., air pollutants, intoxicants, and hazardous emissions). This socially responsible practice increases the efficiency of natural resources, thus alleviating firms' ecological footprint.

Additionally, to gain a profound understanding of the CSR concept in this study, stakeholder responsibilities are divided into four categories: CSR to the Environment (CSREN), CSR for Employees (CSREM), CSR to the Community (CSRCO), and CSR to Consumer (CSRCS):

- CSREN refers to the organization's obligations toward environmental conservation, effectively managing the changing climate conditions, thereby minimizing waste products such as pollutants, intoxicants, and poisonous emissions (Shahzad et al. 2020).
- CSREM alludes to the organization's commitment to providing an eco-friendly environment (e.g., safe and healthy), improving the worker satisfaction and participation, thereby encouraging them to demonstrate eco-friendly behavior (Afsar et al. 2018).
- Likewise, CSRCO advances the organization practices to ensure society's welfare and prosperity (Abbas 2020).
- Lastly, CSRCO reflects the organizational obligation toward fulfilling the social demands of the consumers. It suggests that ethical standards such as eco-compatible product development ensures the organization's success while gaining customer satisfaction and confidence (Tran and Nguyen, 2020).

In developing countries like Pakistan, CSR is at its earliest stage of development, with business models lacking socio-environmental responsibilities. The existing literature highlights that CSR brings considerable benefits to businesses, such as employee loyalty, customer satisfaction, and sustainable development. The recent research conducted in Asia records a positive relationship between CSR practices and corporate social performance. For example, one study suggests that socially responsible communities experience higher sustainable growth than other developing societies (Shahzad et al. 2020).

Corporate Social Responsibility to Environment. To ensure the protection of nature, organizations are implementing environmental standards to improve environmental conditions. In response to these environmental standards, businesses have manifested proactive measures for reducing emissions. Business ethics and CSR principles have radically reduced the profound effect of air containments (e.g., CO2, smog, dust), with organizations adopting eco-friendly production processes, thereby improving the EVP (Maas et al. 2018). As such, organizations have strongly emphasized the importance of environmental sustainability by endorsing CSR practices (Popescu and Popescu 2019). Notably, the concept of environmental sustainability (i.e., CSR) is not related to the enterprise itself. The enterprise promotes eco-friendly behavior while encouraging the stakeholders to practice CSR (Zhang et al. 2019).

Stakeholders in the current age are well aware of the advancement in the business. Hence, based on their interest, it has become imperative for firms to become socially and ecologically responsible towards the environment. In response to the changing market needs, Liu et al. (2021) state that environmental standards should be met where firms should change their behavior towards the environment. They should focus on limiting the aggravated situation of pollution, which is the prime reason for nature's degradation. Hence, based on the previous literature, this study synthesizes the following findings regarding the relationship between CSR and EVP and FP, plus the mediating effect of ESD and GI.

Corporate social responsibility to employees. Businesses around the globe are becoming more ecologically responsible concerning the demands of the stakeholders. CSR, a profound concept in literature, has made companies establish a strong bond with their employees. Employees play an integral role in reducing the ecological footprint of the firms. There is increasing concern that employees associate their psychological feeling with the CSR activities that leads to environmental protection (Kong et al. 2021). Employee-positive CSR intervention protects the environment by significantly minimizing the adverse consequences of climate change. The organization striving to reduce the environmental impact educates its employees on the importance of environmental history. Khanzode et al. (2021) reveal that the employees establish faith in environmental quality and safety.

Moreover, CSR activities lead employees to engage in positive ecological behaviors that enhance the environment and communities. It fosters the needs of the employees by building their confidence in sustainability practices (Le and Ferasso 2022). The prior research suggests that CSR measures promote environmental training at the individual level, influencing employee behavior, attitudes, and overall performance (Singh et al. 2019). Organizations plan and execute CSR procedures for the welfare of the environment and society, encouraging employees to integrate natural concerns into their performance (Boiral et al. 2018). As CSR emphatically adds to the sustainability of the world's communities and environment, this level of CSR awareness among individuals increases a firm's efficiency through pro-active environmental behaviors.

Corporate social responsibility to community. Community plays an integral role in organizational activities. CSR to society enables researchers in this field to extend the scope of the impacts of environmental efforts to neighboring communities. As such, the research shows that, regardless of climate change, CSR actively contributes to the welfare of businesses and communities (Krajnakova et al. 2018). CSR is a unique concept that impacts communities through extending its socio-environmental benefits (Sun et al. 2020). The integration of environmental protection into a CSR strategy helps the company grow, positively contributing to the extended communities (Saleh et al. 2019). Previously, organizations used to operate to raise profits. The involvement of CSR activities has shifted the attitude of organizations, causing them to share their benefits with their stakeholders (e.g., communities).

In accordance with the World Business Council for sustainable development, CSR holds a vital position in determining the prosperity of the world's societies (Garde-Sanchez et al. 2018). Major corporate disasters related to the environment have extended the call for CSR in the business community. CSR implementation empowers communities to deal with environmental challenges. In recent years, the increasing globalization and climate change have called the business to ensure the impact of their activities on society and the community. The adversity of climate change significantly encourages the stakeholders to focus on their social responsibilities towards the environment and community. Corporate social responsibility plays a critical role in enhancing the social and environmental welfare of the communities (Wang and Le 2022). Potentially, CSR advances the social conditions of communities by improving EVP. Altogether, communal CSR represents a win-win situation for both the organization and the society by accelerating the effect of environmental sustainability on the firm's development (Sharabati 2018).

Corporate social responsibility to consumer. Consistently, CSR practices benefit organizations by increasing employee satisfaction and customer loyalty (Sun et al. 2022; Tran and Nguyen 2020). Researchers have found that consumer loyalty advances a corporation's efficiency by massively reducing the marketing cost and increasing its revenue. Subsequently, organizational CSR activities improve consumer loyalty and trust (Moliner et al. 2019). In explaining this notion, prior research shows that CSR practices influence consumers' buying behavior and concludes that environmental welfare boosts consumer trust, impacting consumer preferences during product purchases (Hayat et al. 2020). High ethical standards, promotion of societal well-being, and implementation of sustainable practices (i.e., CSR) encourage consumers to purchase products from socially responsible organizations (Popescu and Popescu 2019), thereby establishing long-term consumer-organization commitment.

In manufacturing, brands try their best to differentiate themselves from others. In this regard, CSR is an essential component that has increasingly gained the attention of the stakeholders (e.g., consumers). The position notion of CSR inspires consumers to buy the product (Le et al. 2022). It increases brand value by establishing strong brand loyalty (Le 2022c). The prior literature show that the most significant advantage of CSR implementation is the strengthening of the brand's image, thereby improving the customer-organization relationship, gaining loyalty, and developing a competitive advantage (Nadanyiova 2021). Altogether, CSR enhances the consumer attitude, leading them to trust the brand emotionally, which is an essential factor in a purchase decision.

The relationship between CSR and environmental and financial performance. Traditionally, corporations were ranked and judged based on their annual financial earnings. This means that businesses that gained more profit were evaluated positively by internal and external stakeholders. Presently, stakeholders assess corporations based on their CSR. CSR practices improve the environmental conditions (Kraus et al. 2020), ultimately progressing the organizations' FP. In developed countries such as China, many manufacturing businesses have considered CSR as a vital source of modifying firms' business models, hence improving the financial and EVP. CSR fosters the firm's performance and financial value (Hendratama and Huang 2021). CSR, a phenomenon of sustainability, devotes the firms' economic development, where its activities enrich the efforts of the employees towards environmental protection. The SME's success depends on the firm's ability to align its financial performance with the sustainability domains (i.e., socio-ecological) (Bach et al. 2021). Positive CSR practices not only improve the firm's financial value but also the economic and environmental value (Tiep Le and Nguyen 2022).

CSR activities benefit global societies and the environment (Li et al. 2019b). CSR is a significant element in creating value for an organization's people, society, and the environment. The ecological effects of CSR broadly affect worldwide manufacturing businesses. The manufacturing industry causes deterioration in

environmental conditions by emitting various air pollutants (i.e., dust, smog, gases) during the production process. The literature show that CSR investments positively affect resource-based industries (i.e., production, mining, and construction), thereby adding to their EVP and FV (Khan et al. 2018). Almost every business strives to generate a rewarding output while maximizing corporate profitability. Hence, the literature reflects that favorable environmental conditions make the consumers pay a premium price for the product, substantially increasing the firms' economic performance (Thanh et al. 2021b).

Environmentally sustainable development and green innovation as a mediator. The CSR concept is founded on the idea that organizations should consider their long-term footprint and their role in environmental sustainability (Shahzad et al. 2020). The gap between an organization's stated values and actions might hinder its ability to gain sustainable development (Sanchez-Sabate and Sabaté 2019). As such, organizations' goals for sustainable development have been encouraged by the need to satisfy stakeholders' desires; therefore, environmental sustainability mediates the relationship between CSR and performance. Hence, organizations should not ignore the concept of sustainable development when considering adaptation of socially responsible activities (Żelazna et al. 2020). CSR and sustainable development widely relate to the same sphere of environmental impact, enabling corporations to achieve socio-ecological benefits.

Significantly, the adoption of eco-innovative activities by stakeholders (i.e., employees and society) values EVP (Cheema et al. 2020), while sustainable development strongly mediates firms' FP. The literature indicates that businesses are now undertaking environmental protection activities (i.e., CSR) to minimize the ecological burden on stakeholders (El Akremi et al. 2018), subsequently boosting the organization's earning ability. CSR contributes toward long-term sustainable development (Shahzad et al. 2020) while satisfying the stakeholders' interests, thereby driving the worldwide economies.

The literature suggests that eco-friendly practices significantly influence EVP (Famiyeh et al. 2018). CSR efforts increase ecological awareness among stakeholders, thereby making social responsibility a fruitful investment. It provides manufacturing businesses with an opportunity to comply with the principle of sustainable development through the integration of eco-friendly practices. Significantly, CSR has increased the desire of firms to "go green" by reflecting green practices in their business investments. GI supports the CSR activities of businesses, achieving sustainable economic growth (He et al. 2019). The recent concept of GI conforms to maintaining ecological quality, spontaneously transforming green practices into the firm's financial victory (Šebestová et al. 2018). In the age of sustainable development, GI has enabled corporations to achieve financial stability (Sardana et al. 2020), diminishing the negative outcome of the production processes, in particular, climate change.

Indeed, the previous literature shows that a business's financial and EVP is significantly related its GI process (Rehman, et al. 2022; Saudi et al. 2019). GI improves product differentiation while enhancing corporate green performance, thereby gaining a competitive advantage over the other firms. A study on the manufacturing industry found that GI activities in firms' practices have resulted in a positive increase in EVP (Abu Seman et al. 2019; Rehman et al. 2021). Moreover, GI increases a company's revenue by reinforcing eco-friendly practices, thereby offering a diverse range of green products to external stakeholders (e.g., consumers and society). GI creates new products, which improves company's sales, thus increasing the efficiency of production processes (Scarpellini et al. 2020). Overall, GI fosters productivity of the business process while mediating the effect of green social responsibility on corporate FP (Ghassim and Bogers 2019).

Green innovation strategies and green innovation actions as a moderator. The intense acceleration of industrialization has caused countries to contribute to environmental degradation. Noticeably, the excessive disposal of waste material on the part of organizations means stakeholders have experienced severe consequences in the form of ecological vulnerabilities. Organizational regulatory practices in this regard bring fruitful results by promoting pollution protections that stop the waste materials from further exacerbating the environmental decline. Significantly, in recent years, increased concern for environmental sustainability has forced organizations adapt to ethical standards of business practices (Raza et al. 2020), thereby ensuring the implementation of GI strategies in the business lifecycle. A green innovation strategies (GINS) is a strategy which minimizes the environmental impact of climate change by actively incorporating social responsibility practices into strategic planning processes (Wang et al. 2021).

EVP involving eco-friendly practices decreases the production of harmful products, carbon emissions, and waste products, as well as advancing energy-saving activities, through implementing GINSs. A GINS is preserves environmental quality by conserving natural resources. It establishes the foundation of a green economy by combining ecological and financial benefits (Wang et al. 2020). The implementation is aimed at reducing harmful air materials adopted innovative technologies, supporting the pro-environmental infrastructure (Żelazna et al. 2020). Corporations have a huge responsibility to act according to environmental standards. As a result, CSR initiatives have become an integral part of business strategy, affecting the natural environment and societies. The literature suggests that incorporating green practices in an organization's strategic plan encourages the businesses to overcome environmental barriers, thus increasing the firm's financial productivity. Companies pursuing GINs enhance their offering (i.e., product, process) while bringing in valuable revenue. Le (2022a) states that green strategy and corporate social responsibility facilitate the firms' environmental performance and sustainable development. A study from the Chinese manufacturing industry shows that CSR improves GI practices, fundamentally advancing organizations' economic and EVP goals (Saeed et al. 2018).

As stakeholder concerns about environmental protection have increased rapidly, ecological practices have become an increasingly important part of firms' strategic plans (Khan et al. 2019). It has been demonstrated in the literature that corporate plans (i.e., green actions) strategically allocate the firm's resources to CSR activities, thereby enabling it to differentiate its product from those of its competitors (Tulcanaza-Prieto et al. 2020). Green activities in business strategies garner positive feedback for the company from its stakeholders, which is beneficial in gaining modern financial development (Han et al. 2020). GINAs encourage the organization to exhibit socially responsible behavior, fundamentally influencing the stakeholders' perception and attitude. Based on the literature findings outlines above, Fig. 1 presents the conceptual study framework.

Methodology

This research utilizes a quantitative approach, similar to Ferraris et al. (2022). The sample consists of employees from the manufacturing sector in Pakistan. This sector was selected because it is facing regulatory pressure from government and public concerns regarding the environment, providing ideal conditions for investigating the conceptual model in this study. In order to

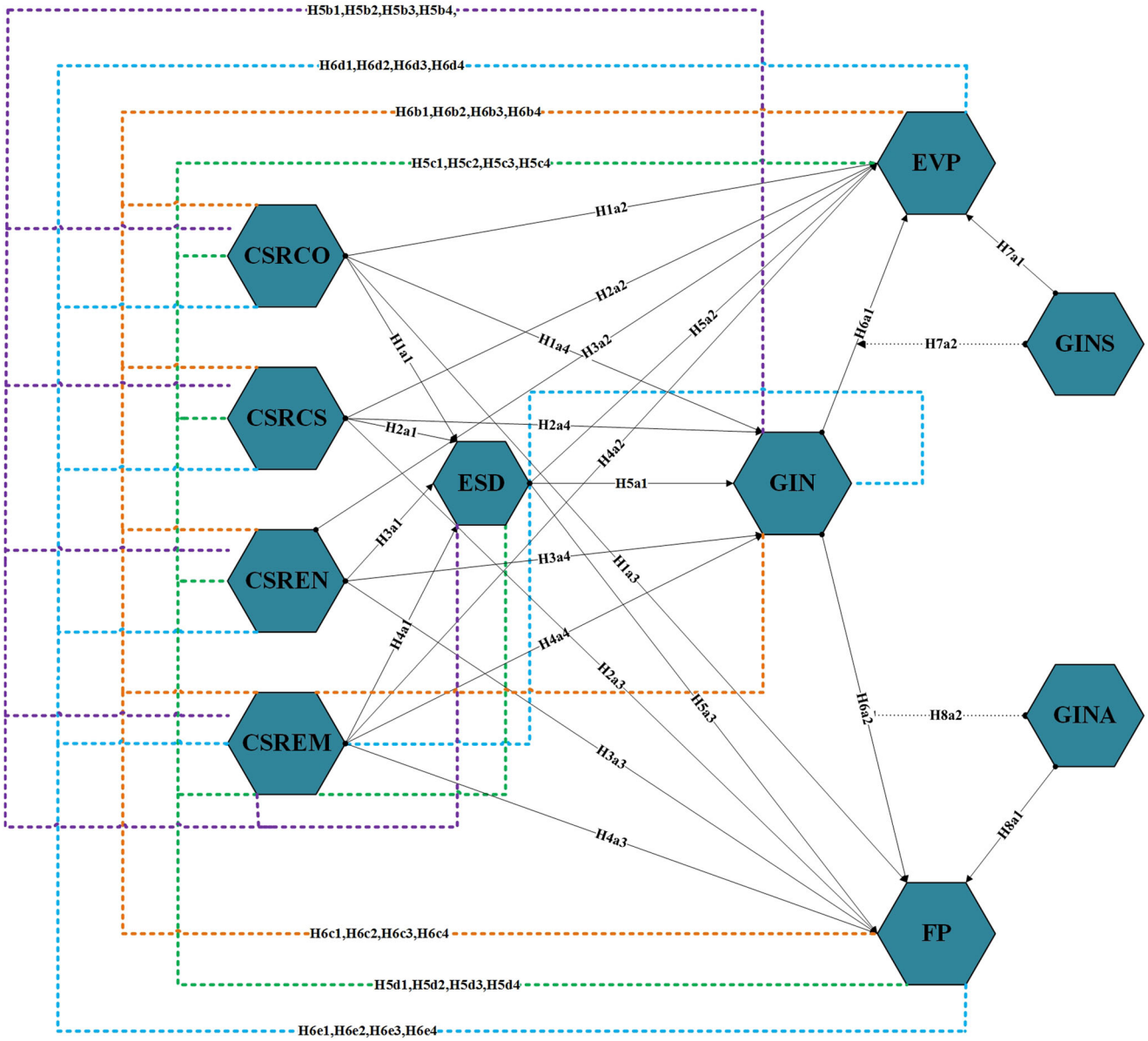

Fig. 1 Study Theoretical model.

conduct the survey, manufacturing companies provided lists of their top management personnel. Prior to conducting the survey, the employees provided their informed consent. Managers and employees of manufacturing companies that have adopted and implemented GI are the target population. A further characteristic of the respondents is their understanding of the leadership styles of upper management when it comes to environmental concerns; they have implemented GI practices on a real-time basis. In addition, they are striving to improve the performance of their business.

The selected manufacturing companies are located in Lahore, Faisalabad and Karachi. We distributed the questionnaires among employees by using the convenience sampling method. Employees were invited to participate in the survey by filling out a questionnaire. Each respondent received an envelope containing a questionnaire form and a brief explanation of the purpose of the survey, emphasizing the confidentiality and security of the responses. The survey respondents were asked to complete a questionnaire and return the envelope with the completed questionnaire. Some participants were also asked to complete the survey by email. Six hundred questionnaires were distributed to respondents during September 2021 -December 2021, of which 525 questionnaires were returned; 497 questionnaires were found to be valid and useable, a 70% response rate. Table 1 provides demographic information about respondents to this survey. There were 199 female participants and 298 male participants, which was a fairly balanced distribution of gender. In terms of age, the participants were divided into different age groups. A large proportion of the sample consisted of individuals between the ages of 26 and 35, accounting for 29.2% (145 participants). The educational background of the participants varied. In the study, 38.4% (191 participants) of the participants held a master's degree. In summary, the table provides a comprehensive overview of the demographics and professional characteristics of the study participants, including their gender, age, education, marital status, position, and salary range

Measurement scale. The study tested independent variables (CSREN, CSREM, CSRCO, and CSRCO), mediator variables

Table 1 Participants profile.

Items	Frequency (N = 497)	(%)
Gender		
Female	199	40
Male	298	60
Age		
20–25	34	6.80
26–35	145	29.20
36–45	119	23.90
46–55	145	29.20
>55	54	10.90
Education		
Higher Secondary School	67	13.50
Bachelor's degree	169	34.00
Master's degree	191	38.40
Higher Studies/ Others	70	14.10
Marital Status		
Married	410	82.50
Single	87	17.50
Position		
Assistant Manager	15	3.00
First Line Manager	19	3.80
Middle Level Manager	202	40.60
Senior Level Manager	207	41.60
Executive Level	54	10.90
Salary		
30,000–60,000 PKR	22	4.40
60,001–85,000 PKR	20	4.00
85,001–95,000 PKR	280	56.30
>95,000 PKR	175	35.20

(ESD, GI), moderated variables (GINAs, GINS), and dependent variables (EVP, FP). All variables were measured with multiple items that were adopted from previous studies. Therefore, each item was measured using a 7-point Likert scale ranging from 1= strongly disagree to 7=strongly agree. This study adopted Farooq et al.'s (2014) and Turker's (2009) scales of CSR. CSREN was measured with a four-item scale, CSREM was measured with a six-item scale, CSRCO was measured with a three-item scale, and CSRCO was measured with a three-item scale. The mediator variables (ESD and GI) were measured on a six-item scale adopted from Bansal (2005) and Song and Yu (2018).

Moreover, the moderating variables (GINAs, GINS) were measured with a three-item scale adopted from Zhang et al. (2015). The dependent variables (EVP and FP) were measured with a scale adopted from Daugherty et al. (2002), Li et al. (2019a), and Li and Ye (2011).

Common method bias. Common Method bias occurs when the same data collecting method is employed to measure several constructs or variables. Researchers can prevent this bias by using other data collection procedures or statistical approaches or controlling for common method variation in their studies. This research also tested for common method bias using Harman's single-factor approach. The variance extracted by one single factor is 26.660% which is less than 50% (Podsakoff et al., 2003).

Results

Assessment of measurement model. Reliability, validity, and discriminant validity must be analyzed in the measurement model. In reliability, the Alpha and CR values must be investigated, and both must be higher than 0.7, as was the case in this study (Gefen et al. 2000). Convergent validity includes the standardized loadings of each construct analyzed, which must also be higher than 0.5, as was the case in this study (Bagozzi and Yi 1988). Furthermore, AVE was greater than 0.5, resulting in no convergent validity issue in this research (see Table 2). Figure 2 presents the graphical representation of the assessment measurement model.

The square root of AVE must be greater than the correlation coefficient, as indicated in Table 3, which indicates a good discriminant (Fornell and Larcker 1981). The discriminant was evaluated using the second cross-loading approach. The outcomes illustrate that there are no cross-loadings found between the items.

HTMT was also applied to test discriminant validity. Henseler et al. (2015) stated that value of HTMT less than 0.85 lower than 0.85 indicates the no discriminant validity between the constructs (see Table 4).

This research also checked the VIF values (see Table 5). All values fell below the threshold, i.e, 5 levels as suggested by Diamantopoulos and Siguaw (2006).

Structural model

Hypotheses testing. Partial Least Squares Structural Equation Modeling (PLS-SEM) technique was used for the testing hypothesis using Smart-PLS software version 3.3.3. Ringle et al.'s (2015) bootstrapped technique was used, which recommended a 5000-sample size to acquire the hypothesis testing results. Tables 6, 6 (a), and 6 (b) shows the results of direct mediation, serial mediation, and interaction effects.

Table 6 displays the analysis of the structural model. All hypotheses (H1a1 to H1a4) are accepted (Beta = 0.259, 0.091, 0.114, and 0.116, respectively). H2 (a1), H2 (a2), H2 (a3), and H2 (a4) are confirmed (Beta = 0.281, 0.150, 0.131, and 0.150, respectively). H3 (a1) to H4 (a4) are recognized as well (Beta = 0.312, 0.142, 0.111, 0.111, 0.271, 0.091, 0.089, and 0.146, respectively). H5 (a1) to H5 (a3) are also established (Beta = 0.569, 0.385, and 0.372, respectively). Furthermore, H6(b1) to H6(b2), H7(a1), and H8(a1) are confirmed to demonstrate a positive and statistically significant relationship between the hypotheses (Beta = 0.323, 0.307, 0.257, and 0.304, respectively).

Table 7 displays an analysis of mediation and serial mediation effects. The results reveal that the mediation effect from H5(b1) to H5(d4) have a significant mediation effect (Beta = 0.147, 0.160, 0.154, 0.177, 0.100, 0.108, 0.104, 0.120, 0.096, 0.105, 0.101, and 0.116, respectively). Moreover, H6b1 to H6c4 are accepted. Regarding serial mediation from hypotheses H6(d1) and H6 (e4), the current study found significant serial mediation effects (See Table 7), while Fig. 3 shows a structural model of study variables.

The hypothesis H8 (a1) and H8 (a2) were accepted in this study. The interaction effect of GINS and GINAs on environmental performance and financial performance are positively significant ($\beta = 0.112$ and 0.129). The interaction results show that the relationship exists between GIN & EVP and GIN & FP are stronger when GINS and GINA are present. Figure 4 shows the interaction effect of GINA and GIN, while Fig. 5 presents the interaction between GINS and GIN. Table 8 shows that these findings are significant.

Quality criteria. R square is a "measure of the proportion of an endogenous construct's variance that is explained by its predictor constructs" (Hair et al. 2021). The values [0.25, 0.50, 0.75] are commonly used for the ranges [small, medium, large], respectively. Consequently, the R^2 and F^2 values are captured in Fig. 6. The Smart–PLS procedure in the PLS algorithm helps in the compilation of the data for small, medium, and large effect sizes, i.e. [0.02, 0.15, 0.35], specifically for the exogenous latent variable (Cohen, 2013).

Table 2 Reliability and validity analysis.

Construct	Items	Loading	α	CR	AVE
Corporate social responsibility to environment	CSREN_1	0.763	0.802	0.871	0.627
	CSREN_2	0.793			
	CSREN_3	0.808			
	CSREN_4	0.803			
Corporate social responsibility to employees	CSREM_1	0.762	0.863	0.897	0.593
	CSREM_2	0.789			
	CSREM_3	0.749			
	CSREM_4	0.791			
	CSREM_5	0.767			
	CSREM_6	0.761			
Corporate social responsibility to community	CSRCO_1	0.793	0.751	0.857	0.667
	CSRCO_2	0.817			
	CSRCO_3	0.839			
Corporate social responsibility to consumer	CSRCS_1	0.868	0.779	0.869	0.690
	CSRCS_2	0.856			
	CSRCS_3	0.764			
Environmentally sustainable development	ESD_1	0.826	0.908	0.929	0.684
	ESD_2	0.832			
	ESD_3	0.826			
	ESD_4	0.813			
	ESD_5	0.827			
	ESD_6	0.839			
Green Innovation	GIN_1	0.839	0.912	0.931	0.694
	GIN_2	0.810			
	GIN_3	0.838			
	GIN_4	0.825			
	GIN_5	0.826			
	GIN_6	0.858			
Green Innovation Actions	GINA_1	0.777	0.708	0.837	0.631
	GINA_2	0.777			
	GINA_3	0.828			
Green Innovation Strategy	GINS_1	0.742	0.704	0.830	0.621
	GINS_2	0.740			
	GINS_3	0.874			
Environmental performance	EVP_1	0.836	0.861	0.905	0.705
	EVP_2	0.854			
	EVP_3	0.834			
	EVP_4	0.834			
Financial performance	FP_1	0.839	0.871	0.912	0.721
	FP_2	0.857			
	FP_3	0.840			
	FP_4	0.859			

Q^2 impact ranges in [0.02, 0.15, 0.35] for the small, medium and large scales (Chin, 1998). However, when Q^2 exceeds zero, the model demonstrates predictive relevance. Q^2 latent constructs are listed in Fig. 7.

Discussion

The growth in environmental issues has changed the dynamics of the world, stakeholders, and businesses, thus increasingly making companies focus on ecological well-being (Ansu-Mensah et al. 2021). The progressing environmental concerns have exerted considerable pressure on the firms regarding the adversity of climate change. In recent years, climate change has inspired people to make efforts to ensure firms' sustainable performance. Hence in this regard, today, the concept of CSR has become popular among developing nations. CSR enables organizations to gain a dominant position in the market by forming symbolic relationships with the stakeholders. Concerning the stakeholder concept, employees and consumers play an integral role in enhancing the company's CSR activities. CSR enhances the stakeholders' viewpoint and attitude toward the environment. Kong et al. (2021) state that corporate social responsibility shapes the organizational culture, climate, and activities, fundamentally making the employees environmentally accountable. Thus, our study supports the research findings of Thanh et al. (2021a), states that CSR practices have a significant impact on society, the environment, employees, consumers, and other stakeholders who are essential to the achievement of a company's corporate objectives (including its EVP and FP).

The implementation of CSR is an essential activity that has contributed to the sustainable development of the global ecosystem (Avotra et al. 2021). Corporate social responsibility is a strategic tool that helps firms achieve sustainable growth (Tiep Le et al. 2021). The purpose of CSR activities is to improve businesses performance and innovation. In conclusion, our study proves that CSR activities enhance firms' sustainable development, green innovation, and financial and ecological value. Hence, these findings encourage us to accept the assumption made in Section 2 (i.e., H1a, H2a, H3a, H4a (1,2,3,4)). With this, manufacturing companies are embracing sustainable development to ensure a harmonious balance between their environmental and financial performance. Businesses cannot succeed exclusively based on their economic benefits. It is imperative that

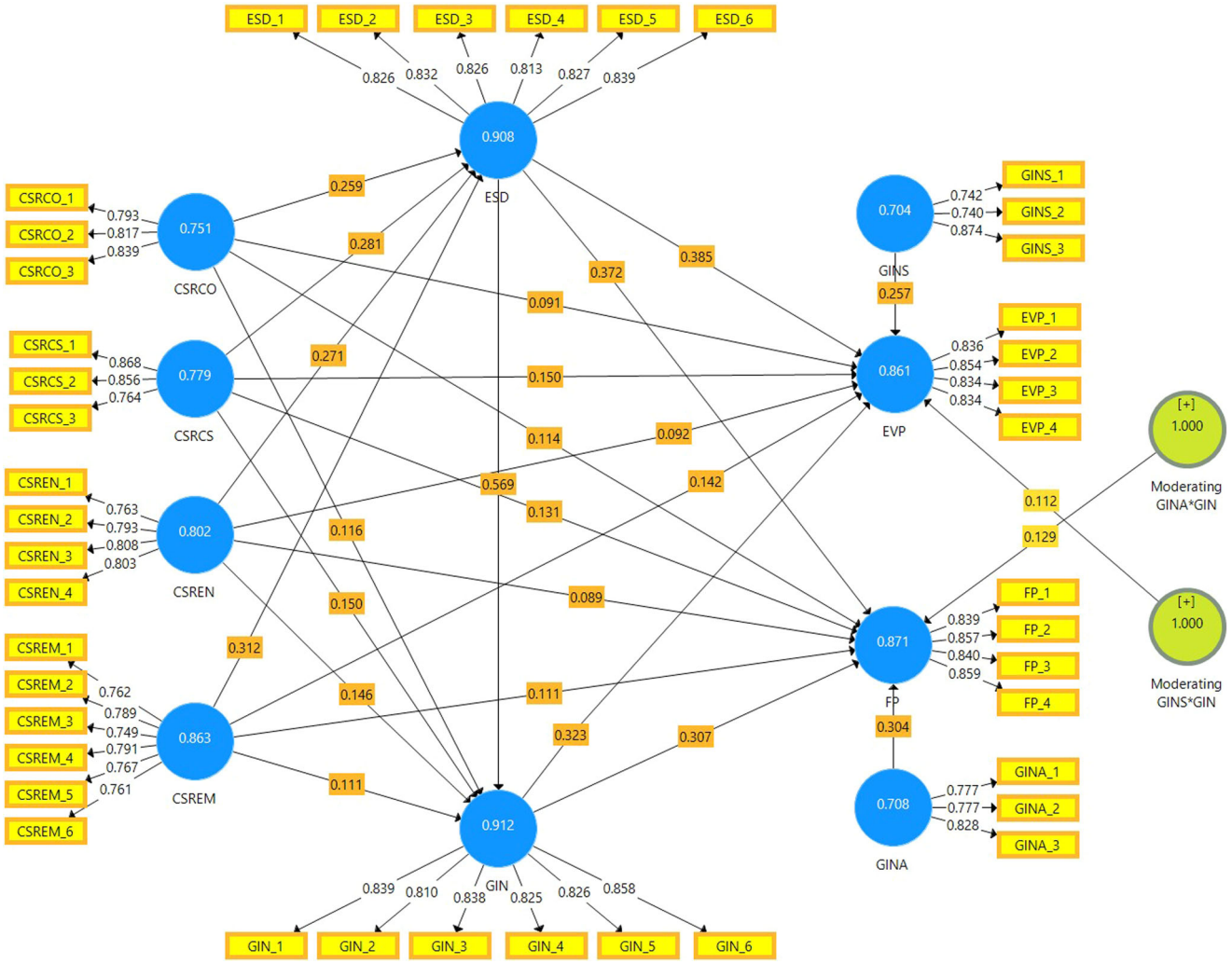

Fig. 2 Graphical representation of Measurement model.

Table 3 Discriminant validity analysis (Fornel Larcker).

Constructs	1	2	3	4	5	6	7	8	9	10
CSRCO	0.817									
CSRCS	−0.072	0.831								
CSREM	−0.089	−0.102	0.770							
CSREN	−0.075	−0.073	−0.099	0.792						
ESD	0.191	0.211	0.233	0.200	0.827					
EVP	0.195	0.275	0.249	0.198	0.673	0.840				
FP	0.185	0.260	0.228	0.207	0.651	0.626	0.849			
GIN	0.193	0.239	0.204	0.229	0.677	0.664	0.632	0.833		
GINA	−0.059	−0.031	−0.022	−0.005	−0.090	−0.099	0.255	−0.122	0.794	
GINS	−0.043	−0.031	−0.042	−0.060	−0.142	0.182	−0.117	−0.131	−0.040	0.788

they balance their interests according to the economy, society, and environment. The practice of corporate social responsibility (CSR) can be a powerful tool for firms in order to enrich the environment. Increasing EVP and FP through CSR maximizes the prosperity of stakeholders (Le 2022a). According to Le and Ikram (2022), sustainable development has a significant impact on the firm's innovation and financial and ecological performance (e.g., H5a (1,2,3)), which is also a key finding of our research. Indeed, our study shows that the research findings are significant to previous studies.

Aside from that, due to the increase in CSR initiatives in manufacturing, business efforts in relation to green adoption are highly respected. Studies have demonstrated that sustainable development and green innovation provide significant benefits to companies (Le and Ferasso 2022). The results of our study are in line with those of Padilla-Lozano and Collazzo (2022) findings, which suggest that green innovation influences the companies' CSR activities, economic performance, and sustainable development. Indeed, our findings in light of this prior study show positive outcomes. Thus, this encourages us to accept H6b (1, 2).

Table 4 Discriminant validity analysis (HTMT).

Constructs	CSRCO	CSRCS	CSREM	CSREN	ESD	EVP	FP	GIN	GINA	GINS
CSRCO										
CSRCS	0.102									
CSREM	0.108	0.133								
CSREN	0.097	0.101	0.131							
ESD	0.23	0.245	0.26	0.234						
EVP	0.24	0.321	0.283	0.237	0.762					
FP	0.228	0.31	0.259	0.248	0.732	0.723				
GIN	0.231	0.276	0.227	0.268	0.744	0.748	0.709			
GINA	0.081	0.088	0.056	0.042	0.115	0.127	0.324	0.158		
GINS	0.08	0.084	0.076	0.083	0.194	0.222	0.158	0.171	0.098	

Table 5 Variance influence factor.

Constructs	CSRCO	CSRCS	CSREM	CSREN	ESD	EVP	FP	GIN	GINA	GINS	GINA*GIN	GINS*GIN
CSRCO					1.023	1.148	1.161	1.111				
CSRCS					1.026	1.174	1.181	1.129				
CSREM					1.034	1.192	1.187	1.161				
CSREN					1.026	1.165	1.164	1.121				
ESD						1.963	1.959	1.308				
EVP												
FP												
GIN						2.033	2.063					
GINA							1.146					
GINS						1.348						
Interaction GINA*GIN							1.186					
Interaction GINS*GIN						1.35						

A green innovation strategy contributes to sustainability by limiting the effects of environmental degradation through the implementation of green innovation actions. The GIS assists the company in making decisions that are beneficial to the protection of the environment. Thus, we conclude that GIS and GIA are integral to achieving sustainable performance (i.e., EVP and FP) (Khalil and Nimmanunta 2021). In particular, the current study findings verify the assumptions made in H7(a1) and H8 (a1).

Our study also reveals that as CSR plays an integral role in forming business strategy, influencing climatic conditions, and enhancing the firm's performance, it has also made the firms gain sustainable development and green innovation. Our findings, supported by the study of Saeed et al. (2018), show that CSR improves green innovation, fundamentally encouraging the firms to achieve sustainable goals (i.e., H5b (1,2,3,4)), ecological and financial performance (for example, H5c and H5d (1,2,3,4)). With this, our study also supports the assumptions made in H6b and H6c (I,2,3,4) that state that the CSR activities support the firms' innovation, ecological goals (Rehman et al. 2021), and financial performance (Han et al. 2020). These study results show a positive mediating role of sustainable development and green innovation strategies.

As the firm goal is to achieve sustainable development, our study also suggests that the CSR categories (CSREM, CSRCO, CSRCS, CSREN) help the companies achieve sustainable development and environmental and financial performance, thus leading the firm towards green innovation. Indeed, this shows that the CSR categories cannot be ignored concerning the firms' environmental and economic aspects, sustainable development, and green innovation. This encourages us to accept the positive serial mediating role between the variables (i.e., H6d and H6e (1,2,3,4)).

Hence, this adoption of eco-friendly activities valuing the firms' ecological (Cheema et al. 2020), financial, and sustainable performance shows that today businesses are considerably focusing on broadening their ecological scope (El Akremi et al. 2018), subsequently boosting the organizational life. According to Allen et al. (2021), today's firms are paying more attention to their environmental performance and green innovation. Pakistan businesses dealing with serious ecological issues need to take strict action. The time has arrived when the country has to think about its environmental management. Therefore, we must all understand that environmental issues cannot be solved overnight. For this, organizations have to constantly strive to improve business performance (Bresciani et al. 2023; Tiep Le et al. 2021). Pakistan should implement CSR at all levels and groups to improve the organization's performance (i.e., EVP and FP). Based on the study results, we accept all the hypotheses by reporting a significant positive correlation between all constructs.

Theortical contribution. CSR is a popular concept that is still controversial as the literature lacks substantial knowledge on this notion regarding developing economies. Considering this research gap, this study is a novel one that sheds light on the latest research findings emerging from the world's developing nations. The study contributes to the previous literature in multiple ways: Firstly, the study categorizes the stakeholders to understand the concept of CSR clearly. It presents literature on the multidimensional measurement of CSR influencing the stakeholders. Secondly, it expands the scope of the study by comprehensively studying the CSR mechanism under the frame of NRBV. Finally, the study adds value to the previous literature by enlightening the need for economic, social, and environmental practices. It underpins the research argument by involving sustainable development and green innovation as a mediator and green innovation strategy and actions as a moderator. The study integrates both the mediating and moderating role, thus making this fundamental model worth investigating.

The study deliverables help to realize the importance of the firms' performance by understanding the role of multidimensional concepts (i.e., ESD, GI, GIS, and GIA) in developing markets. The study contributions hold significant importance for business management and stakeholders. It includes a profound list of variables that encourage businesses to take action toward improving firms' environmental and financial performance.

Table 6 Hypotheses direct effect results.

Hypothesis	Direct relationships	Std. *Beta*	Std. Error	T values
H1(a1)	CSRCO → ESD	0.259***	0.047	5.532
H1(a2)	CSRCO → EVP	0.091**	0.028	3.213
H1(a3)	CSRCO → FP	0.114**	0.034	3.304
H1(a4)	CSRCO → GIN	0.116**	0.036	3.232
H2(a1)	CSRCS → ESD	0.281***	0.047	5.999
H2(a2)	CSRCS → EVP	0.150***	0.029	5.176
H2(a3)	CSRCS → FP	0.131***	0.030	4.422
H2(a4)	CSRCS → GIN	0.150***	0.035	4.292
H3(a1)	CSREM → ESD	0.312***	0.047	6.648
H3(a2)	CSREM → EVP	0.142***	0.029	4.835
H3(a3)	CSREM → FP	0.111***	0.029	3.882
H3(a4)	CSREM → GIN	0.111**	0.033	3.380
H4(a1)	CSREN → ESD	0.271***	0.047	5.814
H4(a2)	CSREN → EVP	0.092**	0.027	3.429
H4(a3)	CSREN → FP	0.089**	0.027	3.353
H4(a4)	CSREN → GIN	0.146***	0.035	4.162
H5(a1)	ESD → GIN	0.569***	0.044	12.960
H5(a2)	ESD → EVP	0.385***	0.049	7.840
H5(a3)	ESD → FP	0.372***	0.047	7.953
H6(b1)	GIN → EVP	0.323***	0.048	6.720
H6(b2)	GIN → FP	0.307***	0.047	6.465
H7(a1)	GINS → EVP	0.257***	0.049	5.223
H8(a1)	GINA → FP	0.304***	0.044	6.930

**$p < 0.01$, ***$p < 0.001$.

Managerial implication. Management, whose focus is to drive the performance of firms, can benefit greatly from the findings of this study. It helps top management understand the benefits of adopting CSR practices in order to achieve sustainability. Today's companies place a high priority on maintaining sustainable performance. In light of this, this study recommends that managers adopt innovative business strategies in order to improve their performance. As a result of CSR, firms are better able to achieve their EVP and FP. Therefore, this study recommends that firms should prioritize their strategic activities with respect to the environment, employees, consumers, and communities. In addition, it encourages policymakers around the world to develop programs that encourage CSR implementation towards sustainable development. Lastly, the company should proactively integrate green innovation into its CSR strategy to reap the long-term benefits. Practitioners are encouraged to adopt green innovation strategies in order to develop their businesses effectively.

Policies implications for government. The Government should recognize the importance of corporate social responsibility in order to promote sustainable development. The business community is encouraged to participate in mitigating environmental issues, such as reducing pollution and waste, improving energy efficiency, and promoting the responsible use of natural resources. In order to achieve this objective, the government is considering introducing incentives for companies that demonstrate effective CSR practices. As a result, the

Table 7 Mediating hypothesis results.

		Std. *Beta*	Std. Error	T values
H5(b1)	CSRCO → ESD → GIN	0.147***	0.031	4.755
H5(b2)	CSRCS → ESD → GIN	0.160***	0.031	5.160
H5(b3)	CSREN → ESD → GIN	0.154***	0.031	5.015
H5(b4)	CSREM → ESD → GIN	0.177***	0.033	5.455
H5(c1)	CSRCO → ESD → EVP	0.100***	0.023	4.293
H5(c2)	CSRCS → ESD → EVP	0.108***	0.024	4.509
H5(c3)	CSREN → ESD → EVP	0.104***	0.024	4.351
H5(c4)	CSREM → ESD → EVP	0.120***	0.025	4.800
H5(d1)	CSRCO → ESD → FP	0.096***	0.022	4.421
H5(d2)	CSRCS → ESD → FP	0.105***	0.023	4.598
H5(d3)	CSREN → ESD → FP	0.101***	0.023	4.343
H5(d4)	CSREM → ESD → FP	0.116***	0.025	4.721
H6(b1)	CSRCO → GIN → EVP	0.037**	0.014	2.772
H6(b2)	CSRCS → GIN → EVP	0.048**	0.015	3.320
H6(b3)	CSREN → GIN → EVP	0.047**	0.015	3.178
H6(b4)	CSREM → GIN → EVP	0.036**	0.013	2.730
H6(c1)	CSRCO → GIN → FP	0.036**	0.013	2.827
H6(c2)	CSRCS → GIN → FP	0.046**	0.014	3.266
H6(c3)	CSREN → GIN → FP	0.045**	0.014	3.136
H6(c4)	CSREM → GIN → FP	0.034**	0.013	2.692
	Serial Mediation Relationships	**Std. *Beta***	**Std. Error**	**T Values**
H6(d1)	CSRCO → ESD → GIN → EVP	0.048***	0.012	3.991
H6(d2)	CSRCS → ESD → GIN → EVP	0.052***	0.012	4.236
H6(d3)	CSREN → ESD → GIN → EVP	0.050***	0.012	4.180
H6(d4)	CSREM → ESD → GIN → EVP	0.057***	0.013	4.474
H6(e1)	CSRCO → ESD → GIN → FP	0.045***	0.012	3.854
H6(e2)	CSRCS → ESD → GIN → FP	0.049***	0.012	4.136
H6(e3)	CSREN → ESD → GIN → FP	0.047***	0.011	4.147
H6(e4)	CSREM → ESD → GIN → FP	0.054***	0.013	4.303

**$p < 0.01$, ***$p < 0.001$.

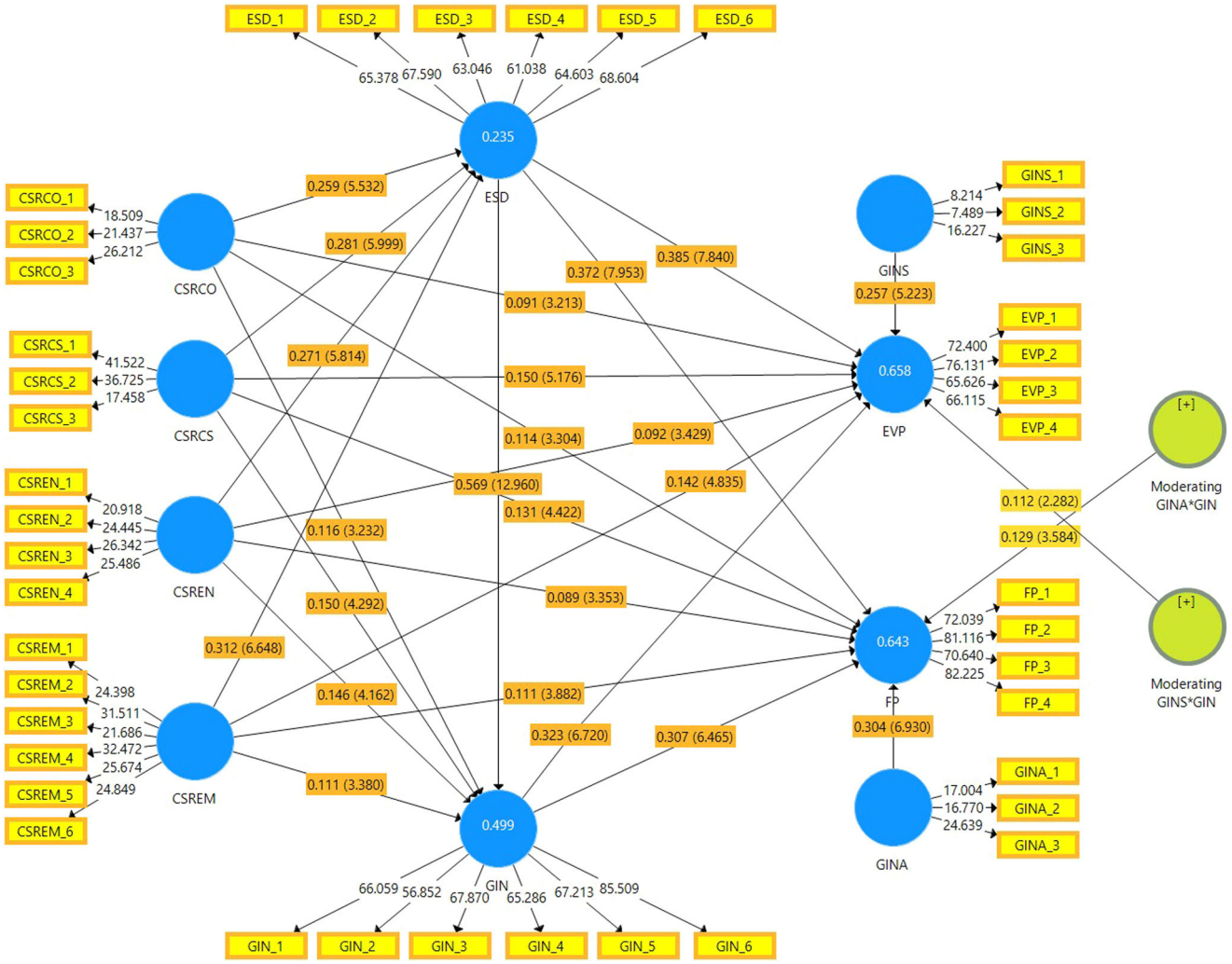

Fig. 3 Graphical representation of structural model.

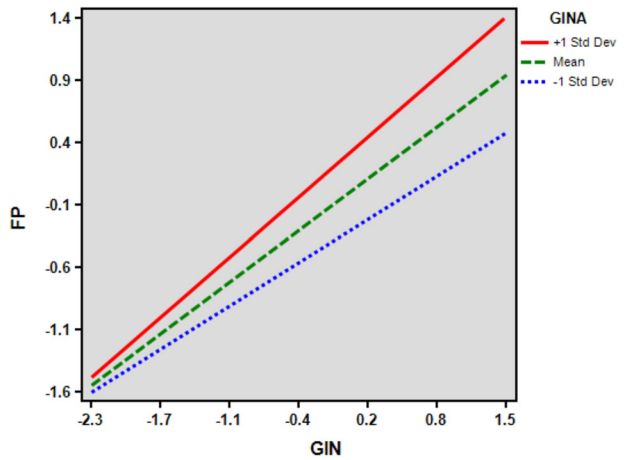

Fig. 4 Interaction effect between GINA and GIN.

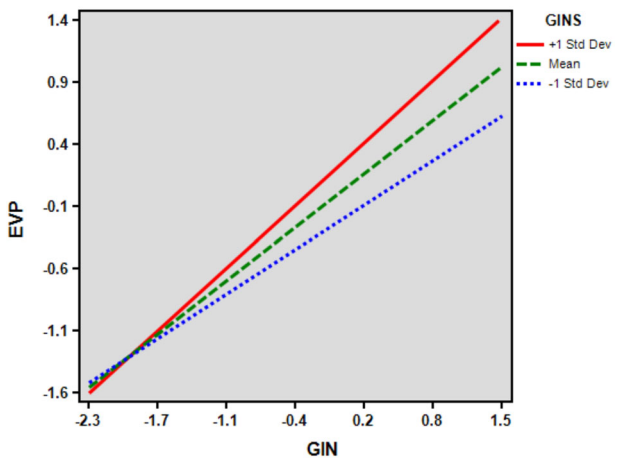

Fig. 5 Interaction effect between GINS and GIN.

government should strictly enforce environmental regulations in order to ensure that businesses maintain high levels of environmental performance. Assessments and audits should be conducted on a regular basis, and penalties should be imposed for noncompliance. It is important for the government to develop policies that promote green innovation. A possible approach would be to provide funding or tax incentives to encourage the development of green technologies, renewable energy, and sustainable practices.

CSR, environmental performance, sustainable development, and green innovation should be promoted by government campaigns. In this way, companies, investors, and the general public will be able

Table 8 Hypotheses testing interaction effect.

Hypothesis	Interaction effects	Std. *Beta*	Std. Error	T values	*P* values
H8(a1)	Interaction GINS*GIN → EVP	0.112	0.049	2.282	0.023
H8(a2)	Interaction GINA*GIN → FP	0.129	0.036	3.584	0.000
Conditional effects					
	Moderation level	**Effects**	**Boot SE**	**LLCI**	**ULCI**
H8(a1)	+1 Std Dev	0.799***	0.049	0.702	0.895
	Mean	0.683***	0.032	0.620	0.746
	−1 Std Dev	0.568***	0.059	0.452	0.685
H8(a2)	+1 Std Dev	0.765***	0.045	0.676	0.854
	Mean	0.656***	0.032	0.595	0.721
	−1 Std Dev	0.551***	0.054	0.445	0.656

***$p < 0.001$.

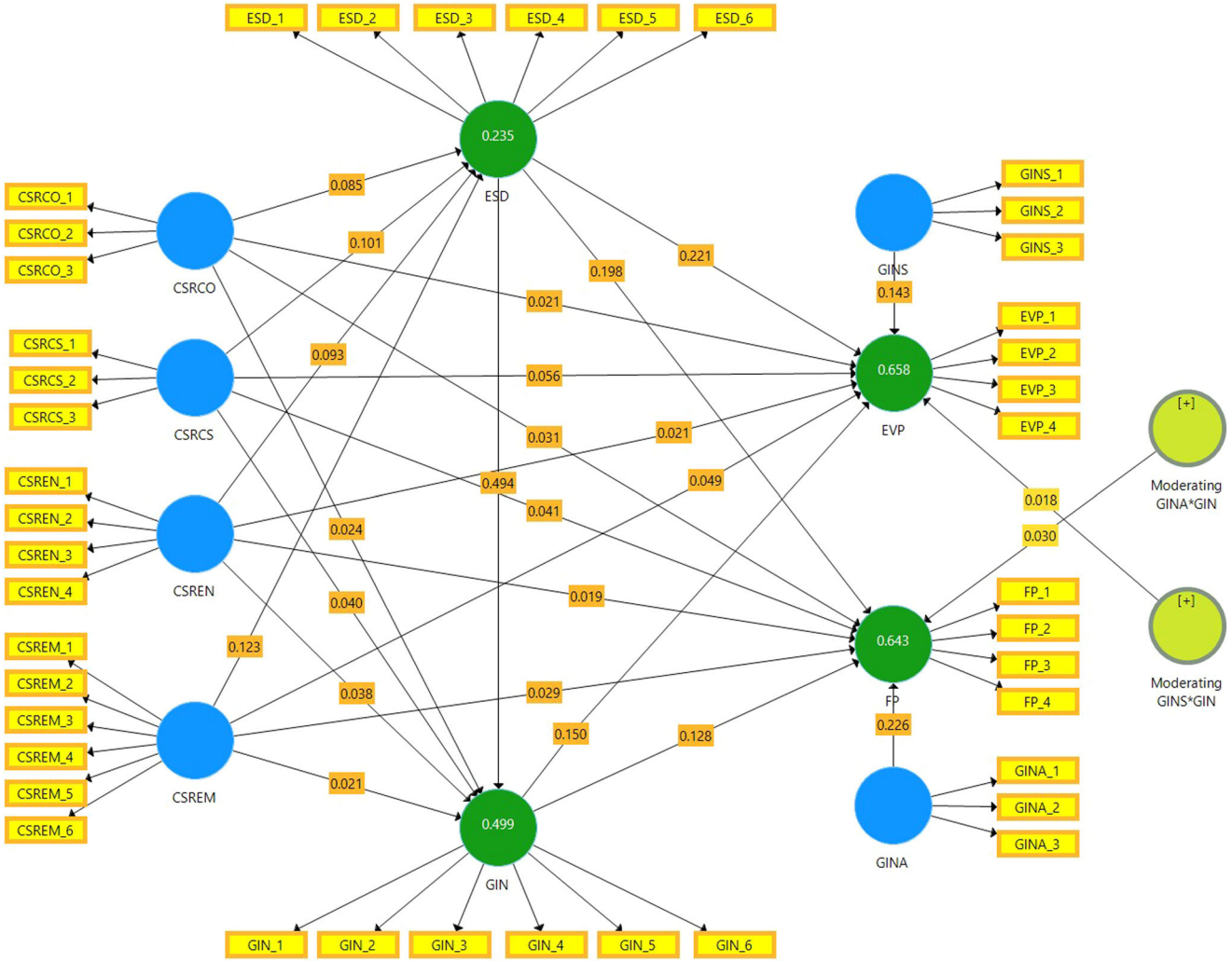

Fig. 6 Quality criteria (R^2 & F^2 values).

to better understand their roles and responsibilities when it comes to promoting sustainability.

Conclusion, limitation, and future scope of the study

The climatic vulnerabilities have created an urgent need to change current business practices. Companies have been urged to coordinate sustainability models in their business operations. Companies are primarily seeking a competitive advantage through GI, a method that can be used to achieve significant economic growth while simultaneously enhancing their shareholder value propositions.

The study is unique in the context of the Pakistani manufacturing industry, as it aims to answer some important questions that have been neglected in developing countries. This study is the first of its kind conducted in Pakistan, and its results will be beneficial to the performance and sustainability

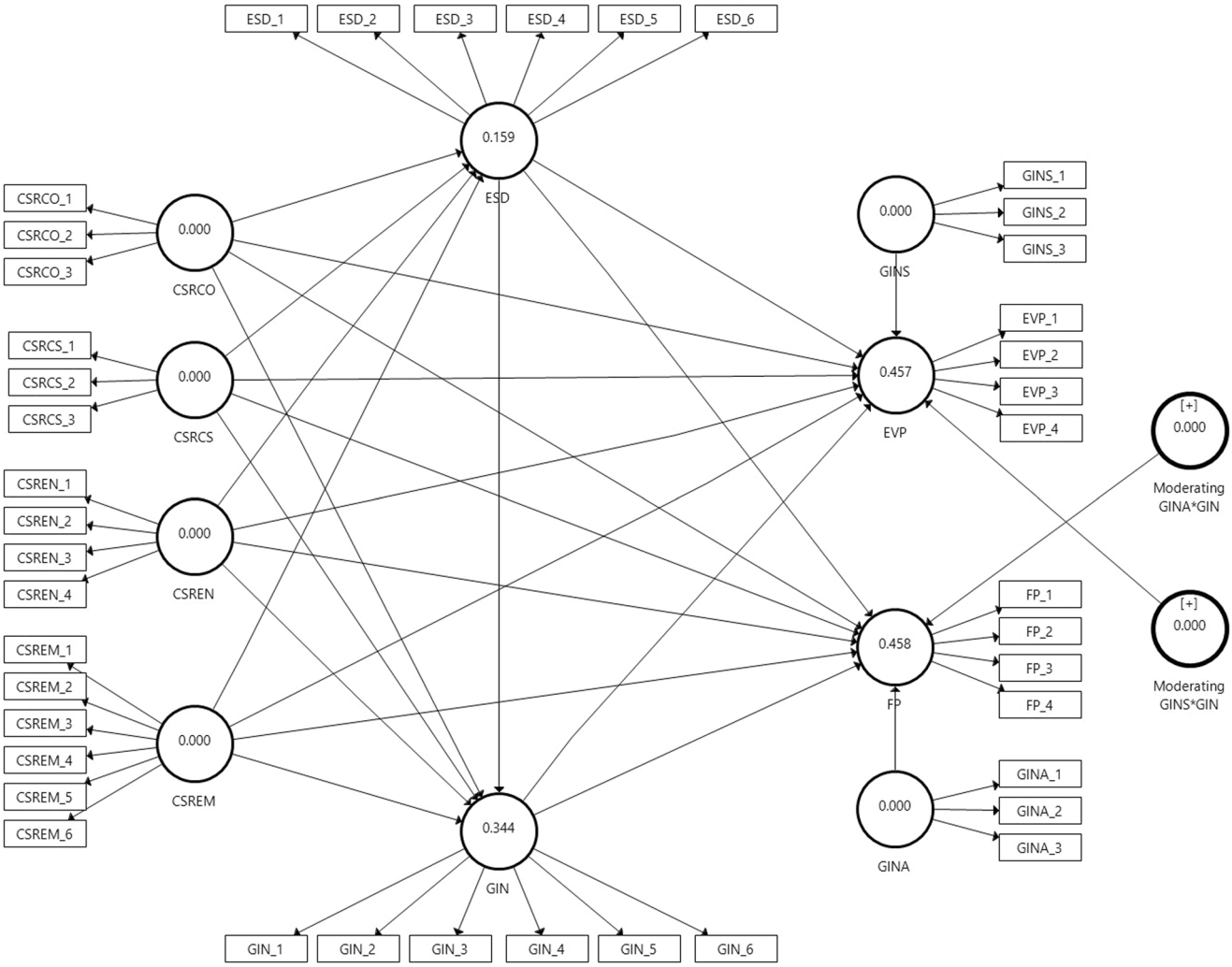

Fig. 7 Graphical representation of Q^2.

of the firm. It has been found that maintaining a positive corporate and social image boosts FP and EVP. The concept of corporate social responsibility is gaining greater recognition, and it is one of the most crucial issues when analyzing the policies regarding environmental policies and globalization in manufacturing firms today. Based on the collected responses and significant results, it appears that GI and ESD in CSR contribute to the success of the firm. At the same time, GINAs and GINS play a moderating role between firm EVP, FP, GI, and ESD.

The study offers some key recommendations for the manufacturing industry in developing countries to improve its EVP and FP. It's worth noting that the study analysis and findings were restricted to the firms' financial and EVP. Future research could include other manufacturing activities such as training and development, green product development, and other financing mechanisms. Furthermore, this study concentrated on manufacturing only. In the future, the research could be conducted on other sectors such as the housing and development, chemical, construction, and tourism industries. A comparative study of two or more developing countries is another potential focus for future research. The equator's principal impact on environmental and social considerations when analyzing a firm's environmental activities could also be explored. Overall, this study reveals that CSR is much more than the cost, charity, and constraints; it can be a source of competitive advantage, opportunity, and innovation.

Data availability

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Received: 20 October 2022; Accepted: 26 May 2023;
Published online: 06 June 2023

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Author contributions

Conceptualization: MS, HH and MAR. Methodology: IO; Formal analysis and investigation: MS and MAR; Writing—original draft preparation: MS, HH; Writing—review and editing: SY; Resources: MAR; Supervision: IO and HH. All authors approved the current study.

Funding

This study is supported by the Scientific Research Start-up Fund of Zhejiang Shuren University, PR China (KXJ0122604).

Competing interests

The authors declare no competing interests.

Ethical approval

All procedures performed were by the ethical standards as laid down in the 1964 Declaration of Helsinki and its later amendments or comparable ethical standard. All procedures performed were by the ethical standards as laid down in the 1964 Declaration of Helsinki and its later amendments or comparable ethical standard. The ethical committee of Department of Business Administration, National College of Business Administration and Economics, Multan Campus, Pakistan approved all the study procedures.

Informed consent

Informed consent was obtained from all participants involved in the study.

Additional information

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