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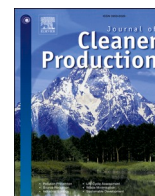
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# Doing good to be green and live clean! - Linking corporate social responsibility strategy, green innovation, and environmental performance: Evidence from Maldivian and Moroccan small and medium-sized enterprises

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## ABSTRACT

Corporate social responsibility (CSR) approaches are becoming increasingly widespread as environmental performance (EP) continues to be a significant aspect of developing a firm's socioemotional wealth, such as legitimacy, trustworthiness, and image. We draw on stakeholder and natural-resources-based view theories to investigate how CSR strategies may improve environmental performance via the underlying mechanism of green innovation (GI), especially in developing countries. Useable data was collected from 367 Maldivian and Moroccan service enterprises and analyzed using partial least squares (PLS-SEM) methodology. The findings indicated that external (Environment and Community) and internal (Employees) CSR-related approaches significantly impact environmental performance. Furthermore, the study suggests a mediation effect of GI on the CSR-EP nexus. Finally, this paper opens significant directions, enriches existing theories, and provides fascinating implications for SMEs professionals.

## 1. Introduction

Over the past half-century, environmental challenges such as record-high carbon emissions, waste energy, pollution, wastewater, and water shortage have rapidly raised the consumption of natural resources, which constitutes 2020's hottest year (Albert, 2020; Brown, 2021; Sepehri et al., 2020; Kannan et al., 2022). In particular, Small and Medium Enterprises (SMEs), as critical pillars of job creation and global economic growth, contribute between 60% and 70% of global pollution (Arnold, 2018; Mendes et al., 2022). However, SMEs' approaches to addressing environmental challenges are not well recognized

(Kortetmäki et al., 2022; Perrini et al., 2007). Especially in Maldives and Morocco, carbon emissions per capita were recorded 3.97 & 1.95 metric tons, respectively, which are relatively significant in comparison with France (4.46), Brazil (2.05), and the United Kingdom (5.22) (The World Bank, 2022). This necessitates immediate actions from all stakeholders to alleviate the environmental repercussions of their industrial activity (Baah et al., 2021; Trumpp et al., 2015).

Integrating economic progress, environmentalism, and community cohesiveness in single research is a cornerstone from a holistic perspective (Kassinis and Vafeas, 2006; Sánchez-Infante Hernández et al., 2020). CSR has been and continues to be more pressing in recent

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years, owing to its increased ethical emphasis on the environment (Fernández-Gago et al., 2020; Islam et al., 2019) and social good (Govindan, 2022). According to *The Forum for Sustainable and Responsible Investment's* 2020 report, businesses worldwide have invested over \$16.6 trillion in CSR programs. Given this, CSR is often seen as a relevant component for long-term viability (Fandos-Roig et al., 2021; Tworzydło et al., 2021).

In particular, many emerging markets are currently anguished by their environmental issues (Kannan et al., 2022a; Zorbakhshnia et al., 2022). There is a compelling case for studying Maldives and Morocco in particular: their geographical diversity, population, culture, economic system, and, most significantly, their performance on the SDG ranking (Maldives 69.27% and Morocco 70.53%). Furthermore, these two nations are part of a polluted area; garbage disposal rates in South Asian countries (including the Maldives) and North African countries (including Morocco) are expected to reach 661 million tonnes and 225 million tonnes, respectively, in 2050 (The World Bank, 2022). As a result, these two countries have taken specific actions in response to these situations. For instance, in Morocco, the General Confederation of Moroccan Enterprises (CGEM) gives accreditation for CSR business. Despite these efforts, enterprises do not regard CSR as a critical component of economic performance (Boutti, 2009); further, the demand for CSR and environmental preservation is far from being observed despite existing legislation (M'Hamdi, M. and Trid, 2009). In the Maldives, a distinctive selling point for tourist resorts is the "clean and green environment" idea. To support this, their President launched "green resort awards" to promote tourist resorts that incorporate green principles in their management (Shareef et al., 2014). Moreover, the Capital Market Development Authority (CMDA) introduced the corporate governance (CG) code to guarantee that businesses respect the CSR baseline. Furthermore, Shareef et al. (2014) assert that just 32% of Maldives firms have formal CSR strategies integrated into their operations, 18% feel CSR may decrease costs, and 68% believe CSR leads to consumer loyalty.

Interestingly, CSR-EP nexus literature is in its infancy. While some studies argue that CSR might increase financial performance (Bruna and Lahouel, 2022; Sameer, 2021), there remains a paucity of evidence on how CSR impacts EP, specifically in developing countries (Kraus et al., 2020). Moreover, while there is an inconclusive debate on CSR and EP, GI as an underlying mechanism has received less attention in explaining why organizations should consider both economic and non-economic outcomes (Abbas and Sağsan, 2019; Grassmann, 2021). Thus, this article proposes a novel framework to examine the CSR-EP nexus via the underlying mechanism of GI in terms of stakeholder and natural-resources-based view theories. More precisely, this research examines the following question: How do CSR strategies impact SMEs' environmental performance in the Maldives and Moroccan contexts, and does GI mediate this association? In order to fill this gap, useable data were collected from 367 Maldivian and Moroccan service enterprises and analyzed using the partial least squares (PLS-SEM) modeling.

Finally, this study makes a significant and novel contribution to the literature on social-environmental management. North America and Western Europe dominate the study area, so the current work is the only paper examining the internal and external CSR approaches-EP nexus of Maldivian and Moroccan service enterprises. Moreover, it is the first paper to examine whether GI mediates the CSR initiatives-EP nexus in developing countries in the light of stakeholder and natural-resources-based view theories. In addition, this study adds to the environmental management foundations in developing countries by highlighting the role of CSR and GI practices in formulating SMEs' environmental performance. Finally, our paper provides a methodological contribution using the PLS-SEM method (Hair et al., 2020).

The next section discusses the related research to establish the theoretical underpinnings and to develop the conceptual framework. Next, the research design and findings are discussed. Finally, the last section summarizes research directions and implications.

## 2. Theoretical foundations and conceptual framework

### 2.1. EP and GI under the stakeholder and natural-resources-based view (NRBV) perspectives

This study relies on stakeholder theory (Freeman and David, 1983) and natural-resources-based theory (Hart, 1995). The stakeholder theory gained recognition and legitimacy by highlighting that firms might "do well by doing good" (Garay and Font, 2012; Kortetmäki et al., 2022). According to the theory's proponents, stakeholders are a firm component that drives techno-leaders' enterprises to act for their advantage in economic and non-economic areas. Drawing on this conceptualization, we analyzed CSR encompassing employees as internal stakeholders and community, environment, and consumers as external ones. However, stakeholders do not address firm environmental strategies equally (Channa et al., 2021; Menguc and Ozanne, 2005; Tang and Tang, 2012). For instance, according to recent Moroccan research, employees are more devoted to their jobs when their employers are involved in the environment and civic society (Chakra et al., 2021). Furthermore, CSR to the community is more vital for individualistic than collectivist employees (Farooq et al., 2014). Similarly, Tang and Tang (2012) argue that competitors, media firms, and government power differences determine SMEs' environmental performance. However, this theory does not provide a holistic view because of the impact of the natural environment on organizational behavior beyond the interest of shareholders and stakeholders (Freeman et al., 2021; McGahan, 2021). In summary, EP is very much connected to CSR in many forms, such as producing an environment-friendly product, reducing carbon emissions, incorporating clean energy, and promoting recycling (Alamsyah et al., 2020; Fan et al., 2020; Sarkar et al., 2021). As an extension of RBV theory (Barney, 1991), natural RBV theory acquired prominence. Hart (1995) confirmed that "one of the most important drivers of new resources and capability development for firms will be the constraints and challenges posed by the natural (biophysical) environment" (p. 989). Therefore, from a natural RBV, businesses should address natural (biophysical) environmental challenges by establishing particular resources and capabilities (Alt et al., 2015). Concretely, many developing economies, in particular, are today beleaguered by environmental issues that have significant implications for the climate and human life; as a result, CSR and GI capabilities may be leveraged as resources to mitigate the negative industrial impacts (Tan et al., 2021), improving financial performance (Vasileiou et al., 2022). Given this, both resources could attain sustained competitive advantage (Chang, 2011), which improves EP (Channa et al., 2021; Menguc and Ozanne, 2005). Nevertheless, few studies explored EP through CSR using the natural RBV theory. Both theories support and test the CSR-EP nexus, specifically in developing countries.

### 2.2. CSR definition and approaches

This study adopted the European Union's definition of CSR, which is "a concept whereby companies integrate social and environmental concerns in their firm operations and their interaction with their stakeholders voluntarily" (European Commission [EU, 2003]). CSR refers to corporate practices that address an organization's economic, legal, ethical, and philanthropic duties related to diverse stakeholders (Carroll and Shabana, 2010; Dahlsrud, 2008). Accordingly, CSR is regarded as instrumental in positioning a firm in the market, and various scholars worldwide are studying its importance (Akbari et al., 2021; Dmytriiev et al., 2021). Not surprisingly, CSR in the Maldives and Morocco is developing (Elomari, S. and Amine, 2021). Liberalization began decades ago; hence, businesses were obligated to meet competitiveness standards, particularly those connected to CSR (Elbaz and Laguir, 2014).

Despite the lack of a universally accepted definition, CSR is multidimensional (Murcia, 2020; Zou et al., 2021). Therefore, this paper used the four spectrums of Farooq et al. (2014) to examine the CSR

practices-EP nexus in Moroccan and Maldivian SMEs, namely CSR to the environment (CSR-ENV), CSR to consumer (CSR-CON), CSR to the community (CSR-COM), and CSR to employees (CSR-EMP). CSR-ENV refers mainly to the enterprises' responsibility toward the natural (biophysical) environment. CSR-CON impacts relationship-building among consumers. CSR-COM depicts the enterprises' initiatives to build a good relationship with society. CSR-EMP represents CSR actions in human resources management within an organization.

### 2.3. CSR to environment and environmental performance

Organizations endure significant pressure from stakeholders in today's worldwide culture and often advocate for social and environmental concerns (Dupire & M'Zali, 2018; Hui and Smith, 2022). To be prosperous, an organization must live up to public expectations (Yohn, 2020); otherwise, the repercussions will be severe for the business. Consequently, Fernández-Gago et al. (2020) noted that CSR is gaining momentum. Previous studies indicated that CSR substantially improves SMEs' economic competitive performance (Surroca et al., 2010; Waheed and Zhang, 2022). Academics have also proven that proactive EP promotes a firm's economic and financial health (Al-Tuwaijri et al., 2004; Deng et al., 2022). Despite its relevance, there remains a paucity of evidence on the CSR-EP nexus. For instance, prior research posited that environmental CSR activities substantially exhibit better EP in emerging markets (Al-Abdin et al., 2018; Brammer and Millington, 2008). Conversely, other researchers have offered conflicting evidence suggesting that CSR has no direct effect on EP (Brammer and Millington, 2008; Kraus et al., 2020; Singh et al., 2019). Overall, the CSR-EP nexus is not definitive and requires additional investigation. Then, the following hypothesis is suggested.

**H1.** CSR to the environment (CSR-ENV) positively affects environmental performance (EP)

### 2.4. CSR to employees and environmental performance

Stakeholder theory states that businesses should react to primary and secondary stakeholders' requirements. Employees are deemed significant stakeholders since they may directly affect how well the firm succeeds (Govindarajulu and Daily, 2004; Paillé et al., 2014). Research in the Maldives reveals that workers' social behavior adversely impacts financial performance (Moosa et al., 2021). Conversely, literature backs that employees who are embedded in environmental challenges act more pro-environmentally by implementing environment-friendly initiatives (Kim et al., 2018; Robertson and Barling, 2013); thereby, these practices promote financial performance and employee well-being (Ahmed et al., 2020; Islam et al., 2019), respectively. However, scholars have paid attention to employees' social behavior consequences on EP (Renwick et al., 2013; Tian and Robertson, 2019). For instance, research posited that conveying environmental strategy makes workers extra-socially accountable for boosting EP (Afridi et al., 2020; Chatterji et al., 2009; Farid et al., 2019). Involving teamwork via CSR events may encourage them to be more inventive and contribute to their environmental sustainability objectives (Runhaar and Lafferty, 2009; Waheed and Zhang, 2022). Then, the following hypothesis is suggested.

**H2.** CSR to employees (CSR-EMP) positively affects environmental performance (EP)

### 2.5. CSR to community and environmental performance

The community is a critical stakeholder with whom firms should create a positive connection by encouraging CSR practices (Ernst and Haar, 2022; Williams and Barrett, 2000). In this sense, SMEs achieve their CSR obligation to society via charitable activities (Kapelus, 2002) by supporting services that increase the quality of life (Ansu-Mensah et al., 2021) and assisting socio-economic growth (Sharma, 2019). Prior

research claims that corporate philanthropy (e.g., education, environment, arts) promotes firm performance (Heli et al., 2008; Jamali et al., 2017). For instance, Maldivian enterprises practice CSR to support communities, particularly impoverished individuals, via charity and philanthropy (Shareef et al., 2014). Research on Pakistan, China, and Bangladesh posited that charitable activities promoted sustainable performance and enhanced corporate image (Bose et al., 2017; Waheed and Zhang, 2022; Yu, 2020). Furthermore, Tahri & El Khamlichi (2019) call for more studies on Morocco's CSR community rather than human rights. However, scholars have given insufficient attention to CSR to community-EP nexus (Gautier and Pache, 2015; Wang and Qian, 2011). In this study, we believe CSR to the community is a beneficial strategy that produces economic and ecologically sustainable development (Sharabati, 2018). Then, the following hypothesis is suggested.

**H3.** CSR to the community (CSR-COM) positively affects environmental performance (EP)

### 2.6. CSR to consumer and environmental performance

Extant studies have acquired global resonance by highlighting the crucial role of consumers, as most external stakeholders, in pressuring modern businesses to act more ethically by implementing CSR for environment-related activities (Islam et al., 2019; Sen and Bhattacharya, 2001; Tao et al., 2022). For instance, 63% of consumers believe companies should address social and environmental change, most customers are prepared to pay a premium for green or environmentally goods, and 76% say they would boycott the enterprise if they learned of unethical business practices (Bhattacharya and Sen, 2004; CONE Communications, 2017; Xie et al., 2019). Previous studies indicated that consumer-related CSR substantially contributes to brand awareness (Achabou, 2020), purchase intention (Lee and Yoon, 2018), and improving firm performance (Bahta et al., 2021; Servaes and Tamayo, 2013). Others posited that ethical enterprises act pro-environmentally on their own by adopting more CSR related to consumers (Waheed and Zhang, 2022), leading to better performance (Deswanto and Siregar, 2018; Saeidi et al., 2015). However, there remains a paucity of evidence on how CSR, to consumers, impacts EP (Ahmad et al., 2021; Brown and Dacin, 1997). In this study, we believe that CSR to consumers makes a win-win strategy for sustainable growth (Maignan, 2001; Sharabati, 2018). Then, the following hypothesis is suggested.

**H4.** CSR to consumer (CSR-CON) positively affects environmental performance (EP)

### 2.7. CSR approaches and environmental performance: the underlying mechanism of green innovation

Research on CSR and GI practices, such as this study, is a way to assess what is happening in the general area called "environmental management" (Rothenberg et al., 2001). GI refers to technological initiatives in environmental management, waste recycling, energy conservation, green product design, and pollution prevention (Albort-Morant et al., 2016; Chen, 2008). The overwhelming body of evidence indicates that SMEs have greater receptivity to GI (Chang, 2011). On the one hand, it is a commercial opportunity to fulfill the needs of global markets and preserve the environment (Zhu et al., 2012). Secondly, SMEs scrutinize and understand innovation's role in addressing environmental concerns (Huang and Li, 2018; Klewitz and Hansen, 2014). Concretely, preliminary evidence posits that SMEs participate in environmental protection to mitigate their considerable environmental effect and to advance sustainable development (De Medeiros et al., 2014; Wang et al., 2021). In addition, GI proponents have demonstrated that technological innovation improves competitive position by reducing negative environmental impact (Singh et al., 2020; Tariq et al., 2019). While there is an inconclusive debate on CSR and organizational performance, GI has received little attention in



explaining why organizations should consider economic and non-economic outcomes (Chiou et al., 2011; Kraus et al., 2020). According to (Hart, 1995), GI could explicate the resources-competitive advantage nexus based on natural RBV theory. Hence, these practices sequentially lead to significant organizational performance (Abrahamson, 1997; Vasileiou et al., 2022), and meet environmental requirements (Chen et al., 2006). Then, the following hypotheses are suggested.

**H5a.** GI positively mediates the effect of CSR to the environment (CSR-ENV) on environmental performance (EP)

**H5b.** GI positively mediates the effect of CSR to employees (CSR-EMP) on environmental performance (EP)

**H5c.** GI positively mediates the effect of CSR to the community (CSR-COM) on environmental performance (EP)

**H5d.** GI positively mediates the effect of CSR to consumer (CSR-CON) on environmental performance (EP)

Fig. 1 presents all proposed hypotheses based on the examined literature review.

### 3. Methodology

#### 3.1. Procedure and sample

The desired research used a cross-sectional design to gather all CSR dimensions and EP data. From January to April 2021, a self-questionnaire was adopted and circulated via an e-survey link. Furthermore, SMEs were used as the analysis unit, and the contexts were the Maldives and Morocco. In this study, SMEs refer to enterprises with fewer than 250 employees (EU, 2003). The service industry (e.g., bank, hotel, IT & BPO outsourcing, global management consulting, new technologies & service, marketing direct, finance & insurance, and telecommunication) covers 367 enterprises, including 188 SMEs from the Maldives and 179 from Morocco. The data was collected from the CGEM, an accreditation institution for the enterprise highly engaged in CSR in the Moroccan context. In the Maldives enterprises, the sample was identified as the government list of rewarded firms regarding their CSR initiatives. Finally, convenience sampling has been steadfastly used to optimize data collection in a short timeline.

On the other hand, the inverse square root and gamma-exponential methods were used to guarantee sample size accuracy for the intended study (Kock and Hadaya, 2018). In doing so, WarpPLS 7.0 software was set on a significance level of 0.05, a power level of 0.98, and a path coefficient of 0.197 (see Fig. 2), and produced a sample size estimated at

353 for the inverse square root and 333 for the gamma-exponential methods. As a result, the sample utilized in this research is highly suitable due to its large percentage compared to those needed.

#### 3.2. Measurement variables

This intended study examined how various CSR strategies affect EP in developing countries. However, the CSR-EP relationship did not intend for empirical research, specifically the quantitative study using measurement scales. Consequently, there is no universal measurement for CSR and EP. This study attempted to incorporate the overused measures based on different research works in this context. On the one hand, the four dimensions suggested by (Farooq et al., 2014; Turker, 2009) were adopted to measure CSR. Three items scored on a five-point Likert scale, ranging from five to one, Strongly Agree to Strongly Disagree, were applied to all CSR dimensions. GI includes three items adapted from (Song and Yu, 2018). Finally, EP, a critical dimension of sustainable development, was measured on three items (Laosirihongthong et al., 2013).

This research also took a set of control variables adopted from previous studies. We used the number of employees to control corporate size. In developing countries, previous studies have argued that SMEs positively improved their EP (e.g., S. K. Singh et al., 2020). Moreover, we considered gender, age, job title and experience, and educational level to control respondents' demographic information as they were taken from the literature on innovation and CSR. These variables were not only considered critical to impact CSR initiatives toward employees (see, e.g., Hur et al., 2018; Shahzad et al., 2020) but because they are widely set as control variables in previous research (Li and Liao, 2017; van Uden et al., 2017; Yánez Morales et al., 2020).

#### 3.3. Data analysis

The variance-based (PLS-SEM) modeling was used to examine the relationship between EP and CSR strategies (H1, H2, H3, H4) and whether this relationship is mediated by GI (H5), using SmartPLS (version 3.2.8) (Ringle, Christian M., Wende, Sven, & Becker, 2015). This technique has already found widespread applications, as it can treat complex models (Hair et al., 2019). Finally, the mediation technique enables in-depth analysis and the production of new insights and fascinating management implications to develop a sustainable EP successfully.

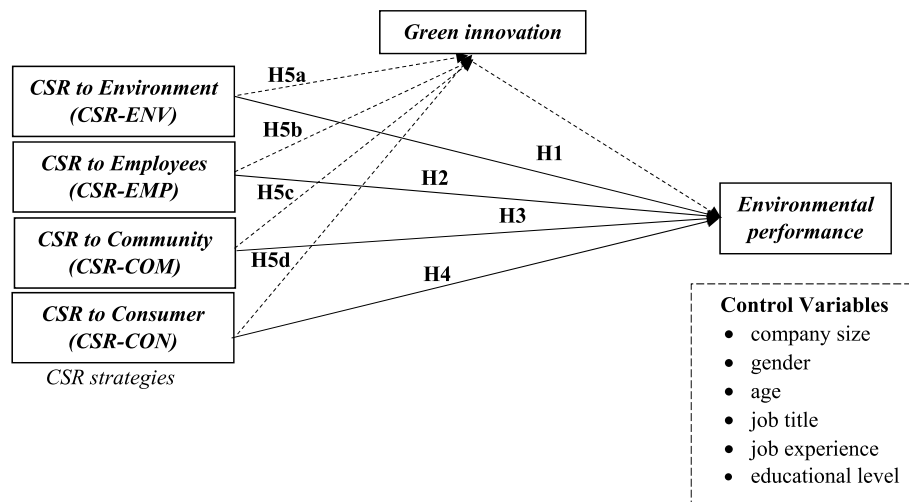


Fig. 1. The research model.

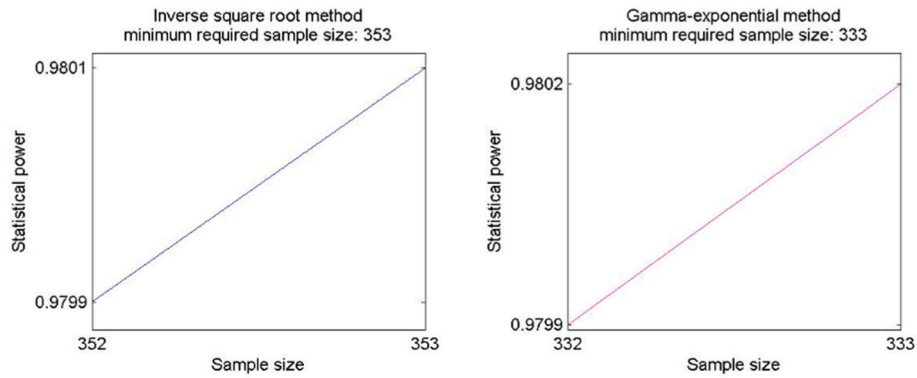


Fig. 2. The sample sizes required.

4. Results

In this section, we begin by describing the demographic statistics, followed by the two-step process of the symmetrical approach analysis, including (1) the measurement and (2) the structural models' analyses based on best practices and recommendations (Hair et al., 2020).

4.1. Demographic statistics

The sample comprises 367 SMEs, wherein 188 are from the Maldives and 179 are from Morocco. Specifically, more than 50% are small, medium-sized enterprises. Moreover, most respondents are males and 50 years and above from both countries. They work in the CEO/MD positions and have moderate experience ranging from 5 to 20 years.

Table 1 Demographic statistics.

		Maldivian SMEs	Moroccan SMEs
N (complete answers)		188	179
Number of employees	1 - 10 employees	5.37%	9.30%
	10 - 50 employees	29.78%	39.60%
	50 - 250 employees	64.85%	51.10%
Job title	CEO/MD	46.10%	52.00%
	Senior supervisor	10.30%	24.70%
	Officer	43.60%	23.30%
Job experiences	0–5 years	27.75%	26%
	5–20 years	28.90%	33.50%
	20–35 years	28.90%	6.30%
	35 years and above	14.45%	34.2%
%Educational-level-	Bachelor's Degree	38.17%	20.41%
	Master's Degree	11.5%	20.34%
	Ph.D. Degree	1.12%	4.25%
	Without	49.21%	55%
%Age	20 years–25 years	13.87%	10.12%
	26 years–40 years	26.00%	14.36%
	40 years–50 years	20.25%	37.76%
	50 years and above	39.88%	37.76%
%Gender	Female	31.81%	27.24%
	Male	68.19%	72.76%

Regarding educational level, most did not have any formation degree, with a small proportion of Master's and PhD degrees. Table 1 shows the detailed demographic statistics of the sample.

4.2. Common method bias

This study employed a mono-method research design that may produce artificial validity and reliability of the measurement model (Spector and Brannick, 2010) due to possible common method variance (CMV). Therefore, statistical remediation decreased the study design's CMV effect. We have undertaken a post-hoc analysis of the complete dataset using the Harman single-factor (Maxwell and Harman, 1968). The exploratory factor analysis has found four components with an eigenvalue more significant than one. Moreover, the general factor explained 36% of the variance, below the 50% cut-off (Podsakoff et al., 2012), which implies that the systematic variation was attributed to the constructs rather than the measurement technique. Consequently, we find that nonresponse bias is unexpected to occur as a substantial concern for this study.

4.3. Measurement model analysis

The reflective measurement model is assessed using confirmatory composite analysis through the fourth stage, including (1) estimation of loadings and significance, (2) estimation of Cronbach's alpha (CA) and composite reliability (CR), (3) average variance extracted (AVE) to assess convergent validity, and (4) discriminant validity through Heterotrait-Monotrait Ratio (HTMT). First, all indicators' loadings are above 0.708 thresholds at the 1% level. Second, CA, CR, and AVE values are more than recommended cut-offs of 0.708, 0.708, and 0.5, indicating good reliability and convergent validity concurrently (see Table 2). Finally, all the constructs' HTMT were significantly lower than the critical cut-off of 0.85 threshold level (Henseler et al., 2015), supporting discriminant validity (see Table 3).

4.4. Structural model analysis

The inner model illustrates causal relationships between dependent and independent variables (Leguina, 2015). Fig. 3, Table 4, and Table 5 show the comprehensive findings. First, all VIF statistics vary from 1.541 to 4.264, less than five thresholds (Hair et al., 2017), confirming no multicollinearity. Second, the coefficient of variation and Blindfolding indicators show that all CSR dimensions moderately explain both GI and EP (Hair et al., 2020; Henseler et al., 2009). Moreover, effect size f2 is small regarding the effect of CSREN and CSRCS, and large for the CSREM. In contrast, CSRCS does not affect EP (See Table 5). Thus, we conclude that the in-sample model predictive power is significant. Third, the out-sample model predictive power is generated based on positive Q2-Predict (Q2predictive = 0.606; k-folds = 10 and 10 repetitions),

**Table 2**  
Internal consistency reliability\*and-convergent-validity-results.

Composite indicators	Loading	Cronbach's alpha	Composite Reliability	AVE
<b>Environmental performance</b>		0.893	0.934	0.824
EP_1	0.925			
EP_2	0.908			
EP_3	0.890			
<b>CSR to the environment (CSR-ENV)</b>		0.921	0.950	0.864
EN_1	0.927			
EN_2	0.924			
EN_3	0.938			
<b>CSR to employees (CSR-EMP)</b>		0.917	0.947	0.857
EM_1	0.919			
EM_2	0.920			
EM_3	0.939			
<b>CSR to the community (CSR-COM)</b>		0.849	0.909	0.769
CO_1	0.905			
CO_2	0.868			
CO_3	0.857			
<b>CSR to the consumer (CSR-CON)</b>		0.908	0.942	0.844
CS_1	0.919			
CS_2	0.910			
CS_3	0.928			
<b>Green innovation (GI)</b>		0.887	0.930	0.816
GI_1	0.926			
GI_2	0.928			
GI_3	0.854			

AVE, average variance extracted.

**Table 3**  
Heterotrait-monotrait ratio (HTMT) results for discriminant validity.

	CSR-CO	CSR-CS	CSR-EMP	CSR-ENV	EP
CSR-CS	0.336				
CSR-EMP	0.284	0.172			
CSR-ENV	0.370	0.616	0.496		
EP	0.419	0.261	0.769	0.678	
GI	0.407	0.372	0.596	0.704	0.733

which signifies the predictive error estimated of our model is medium for most indicators (Shmueli and Koppius, 2011). Lastly, the Standardized Root Mean Square is used to validate the quality of model fit (Shmueli and Koppius, 2011) and is well appropriate (SRMR = 0.052 <

0.08 threshold), which supports the model fit goodness (Henseler et al., 2015).

The hypotheses are subsequently tested for significance using the 5000-bootstrapping approach at a significance level of 0.01. Referring to Table 5, the results shown that the EP is positively and significantly predicted by CSR to the environmental ( $\beta = 0.413$ ), employees ( $\beta = 0.477$ ), community ( $\beta = 0.141$ ), supporting H1, H2, and H3 fully. However, the causal impact of CSR to the consumer on EP is insignificant ( $\beta = -0.033$ ), rejecting H4 (See Fig. 3).

**4.5. Mediation analysis**

In this study, the considerable effect of CSR approaches on GI and GI on EP sheds light on a mediating effect. Consequently, this study employs the non-parametric bootstrapping method (Hair et al., 2017; Preacher and Hayes, 2008) at significant levels of 1%, as well as variance account for (VAF) to calculate the magnitude of the mediating impact (Hair et al., 2014), respectively (see Table 6 and Fig. 3). The findings demonstrated an indirect effect of CSR approaches on EP via GI, specifically for CSR-ENV ( $\beta = 0.115$ ,  $p < 0.01$ ), supporting H5a. Surprisingly, the findings revealed no evidence of GI mediation on the link between CSR-EMP, CSR-COM, CSR-CON, and EP (See Table 6). Thus, H5b, H5c, and H5d were rejected. It is noteworthy that modeling

**Table 4**  
R square and Q Square Blindfolding Results.

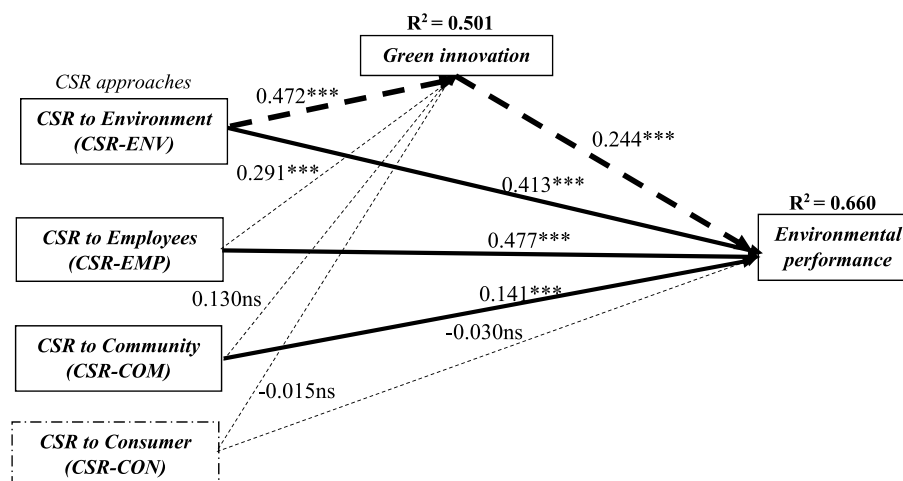
	R <sup>2</sup>	Q <sup>2</sup>
EP	0.660	0.528
GI	0.501	0.403

EP, Environmental performance; GI, Green innovation.

**Table 5**  
Structural model results.

Path	Path coefficient	t-value	CI	f <sup>2</sup>	Verdict
H1. CSR-ENV - > EP	0.413***	8.600	[0.246, 0.558]	0.107	Supported
H2. CSR-EMP - > EP	0.477***	10.705	[0.323, 0.612]	0.314	Supported
H3. CSR-COM - > EP	0.141***	3.710	[0.024, 0.261]	0.029	Supported
H4. CSR-CON - > EP	-0.030ns	0.655	[-0.177, 0.138]	0.001	Rejected

ns, not significant; CIs, confidence intervals; \*\*\*p < 0.01.



**Fig. 3.** The structural model test results with Maldivian and Moroccan service SMEs.

**Table 6**  
Mediation analysis results.

Path	Direct impact (t-value)	Indirect impact (t-value)	Total impact	VAF (%)	Verdict	Full Model
H5a. CSR-ENV -> GI-> EP	0.413***(8.600)	0.115***(4.224)	0.528	21.78%	Partial Mediation	Supported
H5b. CSR-EMP -> GI-> EP	0.477***(10.705)	0.071*** (3.501)	0.548	12.95%	No mediation	Rejected
H5c. CSR-COM -> GI-> EP	0.141***(3.710)	0.032ns (2.358)	No mediation			Rejected
H5d. CSR-CON -> GI-> EP	-0.030ns (0.655)	-0.004ns (0.317)	No mediation			Rejected

ns, not significant; VAF, Variance account for; \*\*\*p < 0.01.

confirms the use of stakeholder and natural-resources-based view theories to explain EP through CSR strategies and GI.

## 5. Discussion and Implications

The current study expands knowledge by underlining how CSR approaches improve EP via GI practices, especially in developing countries. Despite its relevance, there remains a paucity of evidence on CSR and EP. Consequently, this research significantly contributes to CSR literature. As far as we are aware, it is the only paper to investigate the CSR-EP nexus of Maldivian and Moroccan service SMEs. Moreover, it is the first paper to examine whether GI explains the CSR-EP relationship in developing countries. Overall, the results showed a positive link between CSR practices and EP through GI.

Except for CSR to the consumers (H4), the findings showed that CSR initiatives positively impacted EP (H1, H2, and H3), particularly in developing nations. These results are consistent with prior studies supporting the CSR relevance to firm performance (Bahta et al., 2021; Martinez-Conesa et al., 2017; Surroca et al., 2010). In addition, these findings align with (Al-Abdin et al., 2018; Herrera Madueño et al., 2016), who confirm that enterprises involved in CSR exhibit significant EP. These findings should be considered when endeavoring to reconcile contradictory evidence suggesting no causal effect of CSR approaches on EP (Kraus et al., 2020; Singh et al., 2019; L. Wang and Juslin, 2013).

Likewise, this research concurs with previous studies in several ways. More specifically, employees are more devoted to their work when their employer is interested in environmental responsibilities (Chakra, r., hathout, s. And charef, 2021; Farid et al., 2019), leading firms to become more sustainable (Suganthi, 2019; Waheed and Zhang, 2022). Similarly, CSR to the community could improve corporate performance and image by engaging more in charitable activities (Kapelus, 2002; Zheng et al., 2017). Nevertheless, the causal impact of CSR to the consumer on EP is marginal, which contradicts previous assumptions arguing that CSR practices related to customers lead to better firm performance (Servaes and Tamayo, 2013; Zou et al., 2021). In summary, these findings align with prior clues that demonstrate the CSR relevance in improving firm performance (Kortetmäki et al., 2022; Tao et al., 2022; Waheed and Zhang, 2022), enabling it to improve its reputation (Ibenrissoul et al., 2021; Sánchez-Infante Hernández et al., 2020).

Finally, the current research explores the causal effect of CSR approaches on EP through the underlying mechanism of GI. As expected, the findings demonstrated the magnitude of the mediating impact of CSR approaches on EP, specifically for CSR to Environment. More clearly, when enterprises are more engaged in CSR approaches related to the environment, they invest more in technological solutions aiming to protect the natural environment, such as reducing energy usage, consumption of dangerous materials, and air emissions, which in turn improve EP (Albort-Morant et al., 2016; Huang and Li, 2018; Kraus et al., 2020). However, the research revealed no evidence of GI mediation effect on the link between external (Consumer and Community) and internal (Employees) CSR-related approaches and environmental performance. This evidence also would be explained by the fact that GI practices are conceptualized differently to CSR activities related to consumers, employees, and the community (Chen, 2008), which does not improve EP. To sum up, it is noteworthy that modeling confirms the combination of stakeholder and natural-resources-based view theories

to explain EP through CSR and GI practices.

### 5.1. Theoretical implications

This paper provides theoretical implications. Several theoretical lenses have been used in CSR, GI, and EP literature. For example, few studies explored EP through CSR strategies (Kraus et al., 2020), using natural RBV theory. Moreover, stakeholder theory links CSR to economic performance (Yáñez-Araque et al., 2021). To our knowledge, prior research has failed to consider stakeholder and natural-resources-based view theories to explain EP through CSR strategies and GI. In sum, it is noteworthy that modeling confirms the combination of these theories to explain EP through CSR strategies and GI.

### 5.2. Managerial implications

The findings have managerial implications for SME professionals, particularly those engaged in environmental strategies, to improve EP through CSR strategies, particularly in developing countries. The analysis suggests that all CSR strategies favorably influence EP, except for CSR to the consumer. In this regard, managers should be proactive in learning and developing CSR practices that create business opportunities with stakeholders, improving EP. For instance, managers may align and balance CSR strategies to reduce pollution and toxic waste, which improve the environment quality and promote society's well-being. However, regarding long-term performance, SME managers must have formal knowledge and integrate it into their strategies related to specific stakeholders such as employees and consumers. On the one hand, the technology-driven organization could protect their employees beyond legal requirements, such as installing sensor fountains or picking up trash, thus allowing them to be more innovative, improve their well-being in work-life, and, strengthen their environmental sustainability goals. On the other hand, SMEs must cultivate a good strategy with consumers by contributing to their satisfaction and well-being and providing necessary information about processes and products, increasing their willingness to consume green or environmentally friendly products.

The research addressed the EP through CSR strategies by shedding light on the underlying mechanism of GI. The findings demonstrated the mediating effect of CSR approaches on EP, specifically for CSR to Environment. In this regard, SMEs need to be aware of their critical role in promoting their environment. Moreover, owner-managers should be more attentive to the environment to achieve better EP results. Therefore, they could encourage environmental management technologies projects in waste recycling, energy conservation, and pollution prevention (Albort-Morant et al., 2016; Li et al., 2020). Because the results highlight the relevance of specific stakeholders to the EP, owner-managers should adopt win-win CSR strategies based on their own experience and beliefs to achieve better economic and non-economic outcomes.

## 6. Conclusion

This study addresses the environmental performance foundations drawn on stakeholder and natural-resources-based view theories. We



examined the different CSR approaches' impact on EP. We also examined whether GI mediates the CSR strategies-EP relationship in developing countries. Using a sample of Moroccan and Maldivian small and medium service enterprises, we find that external (Environment and Community) and internal (Employees) CSR-related approaches significantly improve EP. We also find that GI partially mediates the external (Environment) CSR-related approaches-EP nexus. Our analysis shows no relation between CSR to the consumer and EP.

This research, like the previous ones, has certain limitations. First, the authors examined CSR strategies-EP nexus by limiting it to service SMEs in Morocco and the Maldives. Future research can replicate this study to observe whether the country's moderating effects change or remain similar between developed countries. In addition, while CSR is multidimensional, future studies can adopt another CSR dimension to examine the CSR strategies-EP nexus more deeply. In addition, collection data could be done based on large companies to verify whether firm size could explain EP through CSR practices, especially in emerging markets. Finally, we invite researchers to adopt a comparative perspective to understand and deeply explain the critical CSR activities that positively improve EP in various industrial sectors and geographical locations.

**Appendix A. Major questionnaire items**

Variables	Items	Sources
Environmental performance	<p><i>EP is measured to what extent do you agree or disagree with the following statements on a 5-point Likert-scale (5–Strongly Agree, 1–Strongly Disagree)</i></p> <p><b>EN_1.</b> Reduction in air emission</p> <p><b>EN_2.</b> Reduction in energy consumption</p> <p><b>EN_3.</b> Reduction in consumption of hazardous materials</p>	Laosirihongthong et al. (2013)
Corporate social responsibility approaches	<p><i>CSR is measured to what extent do you agree or disagree with the following statements on a 5-point Likert-scale (5–Strongly Agree, 1–Strongly Disagree)</i></p> <p><b>CSR to environment</b></p> <p><b>EN_1.</b> My company participates in the activities which aim to protect and improve the quality of the natural</p> <p><b>EN_2.</b> My company makes investments to create a better life for the future generations</p> <p><b>EN_3.</b> My company implements special programs to minimize its negative impact on the natural environment</p> <p><b>EN_4.</b> My company targets a sustainable growth which considers the future generations</p> <p><b>CSR to employees</b></p> <p><b>EM_1.</b> My company encourages its employees to participate in voluntary activities</p> <p><b>EM_2.</b> My company policies encourage the employees to develop their skills and careers</p> <p><b>EM_3.</b> The management of my company primarily concerns with employees' needs and wants</p> <p><b>CSR to community</b></p> <p><b>CO_1.</b> My company gives adequate contributions to charities</p> <p><b>CO_2.</b> My company supports the non-governmental organizations working in the problematic areas</p> <p><b>CO_3.</b> My company contributes to the campaigns and projects that promote the well-being of the society</p> <p><b>CSR to consumers</b></p> <p><b>CS_1.</b> My company protects consumer rights beyond the legal requirements</p> <p><b>CS_2.</b> My company provides full and accurate information about its products to its customers</p> <p><b>CS_3.</b> Customer satisfaction is highly important for my company</p>	(Farooq et al., 2014; Turker, 2009)
Green innovation	<p><i>GI is measured to what extent do you agree or disagree with the following statements on a 5-point Likert-scale (5–Strongly Agree, 1–Strongly Disagree)</i></p> <p><b>GI_1.</b> The company chooses the materials of the product that produce the least amount of pollution for conducting the product development or design</p> <p><b>GI_2.</b> The company uses the fewest amount of materials to comprise the product for conducting the product development or design</p> <p><b>GI_3.</b> The company would circumspectly deliberate whether the product is easy to recycle, reuse, and decompose for conducting the product development or design</p>	Song & Yu (2018)

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**CRedit authorship contribution statement**

**Walid Simmou:** Conceptualization, Methodology, Formal analysis, Writing – original draft. **Kannan Govindan:** Conceptualization, Methodology, Supervision, Writing – original draft, Writing – review & editing. **Ibrahim Sameer:** Methodology, Formal analysis, Supervision, Writing – original draft. **Khaled Hussainey:** Visualization, Writing – review & editing. **Samira Simmou:** Visualization, Writing – review & editing.

**Declaration of competing interest**

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

**Data availability**

The data is included in the paper

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