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Going green, going strong: maximising restaurant performance with sustainable practices

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ABSTRACT: The food and services sector contributes to global carbon emissions, impacting climate change. This study, organised in a developing country, aims to explore how restaurants in the hospitality industry can enhance their environmental and financial performance through corporate social responsibility (CSR), green orientation, green innovation and environmental strategies. Using partial least squares structural equation modelling, data from 283 restaurant employees were examined. The findings show that CSR and green orientation directly enrich both environmental and financial performance. Moreover, green innovation mediates the association with CSR, green orientation and performance outcomes, with the influence of green innovation on performance further moderated by environmental strategies. These results show that incorporating CSR, green orientation, green innovation and environmental strategies can substantially benefit restaurant performance. This study offers constructive insights into the distinctive challenges and opportunities for sustainability in the food and services industry in the context of a developing country, where short-term economic pressures often dominate long-term sustainability goals.

KEYWORDS: environmental strategy, food and services industry, Pakistan

Introduction

In today's increasingly globalised and competitive economy, the food and services industry faces intense pressure to differentiate itself (Tanveer et al., 2023). For restaurant managers, standing out from similar dining establishments is a persistent challenge. From a marketing outlook, environmental sustainability has become fundamental for many firms' survival and success. Restaurants are increasingly acknowledged for their efforts in condensing waste, augmenting resource recovery and implementing environmentally responsible practices. Green restaurants characterise themselves through strategies such as waste reduction, energy and water conservation, organic food procurement and the use of recyclable materials, as well as an obligation to social welfare and ethical business operations (Kim & Hall, 2020). Additionally, both the construction and operation of these restaurants are designed to minimise the environmental impact, certifying minimal repercussions even in the event of operational changes (Tan et al., 2018). The demand for sustainability and eco-friendly practices is mounting in the tourism and hospitality sectors, with consumers looking for environmentally responsible products and services. As a result, a lack of ecological commitment can adversely impact a business's reputation and performance (Yu et al., 2021). Green-certified restaurants play a decisive role in reducing environmental degradation, cultivating operational efficiency, lowering costs and augmenting their brand image (Kumar et al., 2023). This emphasises the increasing importance of eco-friendly practices determined by heightened consumer awareness and interest in environmental preservation.

To address these challenges, restaurants must intentionally adapt to enrich their environmental performance amid growing competition and evolving environmental standards (Joshua et al., 2023). Balancing financial achievement, public well-being and environmental conservation is indispensable for sustaining a positive reputation in a rapidly changing global context (Lu et al., 2019). This entails a shift from traditional business models to collaborative advances, prioritising long-term sustainable growth over short-term profits, and incorporating societal and environmental responsibilities (Matten & Moon, 2008). Sustainability, ethics and responsibility are important for achieving success, underscoring the importance of businesses engaging in socially responsible initiatives (Boccia & Sarnacchiaro, 2018). Conferring to the resource-based view theory, adopting a green orientation and amalgamating green innovations are essential for growing a competitive edge in the restaurant industry (Majali et al., 2022). Green orientation entails a commitment to environmentally beneficial practices that are vital both economic success and environmental well-being (Iddagoda et al., 2023). Green innovation means improvements in product design and operational practices aimed at conserving energy, reducing waste and minimising environmental impacts (Wang et al., 2022). By concentrating on green orientation, restaurants can foster green innovation, augment their environmental stewardship, and improve their economic viability (Pushpakumara, 2019).

In this study, we consider green orientation and innovation in the restaurant industry by providing new insights into how these practices contribute to environmental sustainability. Specifically, we look at how restaurants can enhance their environmental and organisational outcomes through strategic green orientation and the implementation of innovative, eco-friendly technologies. Furthermore, we assess the task of corporate social responsibility in consolidating the competitive position and credibility of green-certified restaurants, and how these practices impact stakeholder economic success (Hu et al., 2010). By highlighting these aspects, restaurants can improve their sustainability efforts and contribute to a more ecologically responsible future.

Literature review and hypotheses development

Theoretical underpinning

The resource-based view (RBV) theory holds that organisations extend a competitive advantage by leveraging resources that are precious, rare, hard to imitate and non-substitutable (Barney, 1991). According to RBV, firms augment their performance by effectively merging these resources and capabilities (Collins, 2021). These resources and capabilities not only fuel superior performance, but also sustain long-term benefits when associated with environmental and social factors (Tian et al., 2023). Recent research emphasises the significance of amalgamating environmental strategy, green innovation, green entrepreneurial orientation and corporate social responsibility to leverage exclusive resources and competitive advantages (Muangmee et al., 2021). Recent research highlights the critical role of green orientation and the adoption of green corporate social responsibility (CSR) practices in driving green innovation, which can augment organizational performance. By integrating environmental strategy, green innovation, and CSR, organizations are better positioned to leverage unique resources and gain competitive advantages (Muangmee et al., 2021). Additionally, RBV advocates that an environmentally based strategy is instrumental in cultivating positive organisational outcomes (Galdeano-Gómez, 2010).

This study addresses a research gap on the integration of environmental and CSR strategies within the RBV framework, which can further clarify the mechanisms that give firms competitive advantages. By assessing these associations, this research gives deeper insights into how green innovations and strategic resource management can improve organisational performance.

The relationship between green orientation and performance

The connection between green orientation and performance emphasises the substantial benefits of implementing eco-friendly practices within organisations. Green orientation, which implies a fundamental shift regarding ecological sustainability in both internal operations and external activities, is fundamental for achieving sustainable goals (Shaharudin et al., 2015). Employees essentially favour green behaviours, which associate with their personality traits such as self-efficacy (Panda, 2021). This orientation includes adopting pro-environmental attitudes and behaviours, such as being ecologists and non-polluters, and incorporating environmental concerns into organisational strategies (Banerjee et al., 2003; Opatha & Arulrajah, 2014). The positive influence of green orientation on performance is seen through enhanced resource efficiency, competitive advantage and adaptability to dynamic (Graham & McAdam, 2016). Sustainable performance, extensive financial metrics like market share and profitability, as well as environmental indicators such as energy conservation and waste reduction, are substantially improved by green orientation (Alyahya et al., 2023). In addition, adopting a green mindset not only nurtures environmental benefits, but also vitalises economic gains, containing resource savings and resilience in unpredictable times (Singh et al., 2020). Scholars focus on the significance of green management in motivating both environmental and organisational performance, chiefly during periods of rapid economic expansion (Mousa & Othman, 2020). Also, green entrepreneurship positively influences environmental and financial outcomes, strengthening the significance of a green entrepreneurial attitude for long-term sustainability and competitiveness (Al-Mamary et al., 2020). Thus, it is hypothesised that green orientation has a constructive impact on organisational performance. Centred on the above discussion, the following hypotheses were established:

- H1: Green orientation is positively associated with restaurant environmental performance.
- H2: Green orientation is positively associated with financial performance.

The relationship between green orientation and green innovation

Based on the wide discussion on green innovation and green orientation, we hypothesise that firms demonstrating a strong green orientation, distinguished by a deep commitment to eco-consciousness and sustainability, are more likely to develop and adopt green innovations. This is supported by the literature, which shows that a firm's green orientation is a crucial factor of its green innovation capabilities (Miles & Munilla, 1995; Gürlek & Koseoglu, 2021). Additionally, we suggest that green innovations are positively related with improved operational efficiency within the restaurant sector. Research recommends that eco-friendly innovations can extensively reduce waste and operational costs while enhancing resource management (Pushpakumara, 2019). Furthermore, we propose that a firm's green orientation positively impacts its ability to manage resources efficiently and to alleviate adverse environmental impacts. This associates with findings showing that eco-oriented firms effectively use green innovations to enhance resource management and minimise environmental harm (Miles & Munilla, 1995; Pushpakumara, 2019). Lastly, we hypothesise that the adoption of green innovations contributes to a competitive advantage by permitting firms to offer sustainable products and services, thus leveraging their green orientation to surpass competitors in the market (Miles & Munilla, 1995; Guyader et al., 2019). All of these hypotheses are associated with the present literature, underscoring the critical link between green orientation and innovation outcomes. Based on this discussion, we propose the following hypothesis:

- H3: Green orientation is positively related with green innovation.

The association between corporate social responsibility and performance

Green innovation includes developing new solutions to reduce environmental harm and mitigate risks (Guyader et al., 2019). It offers businesses practices aimed at decreasing ecological risks, decreasing pollution and reducing adverse consequences by

enabling them to produce or adopt new products, processes, management strategies, or business approaches (Gürlek & Koseoglu, 2021). Particularly in the restaurant sector, nurturing green innovation leads to environmentally sustainable services (Gürlek & Koseoglu, 2021). The green orientation of a firm originates from its eco-consciousness and sustainability-focused business concepts, making it an essential for long-term development and environmental conservation. This orientation indicates the organisation's sustainability competencies and can be a competitive edge (Miles & Munilla, 1995). Environmentally conscious entrepreneurship requires taking risks, being proactive and sustaining competitiveness and independence (Frare & Beuren, 2022). A green orientation can help businesses influence eco-friendly innovation to augment operational efficiency while reducing waste and costs (Pushpakumara, 2019). Companies that adopt an eco-oriented approach efficiently manage resources, diminish negative environmental impacts and capitalise on green innovation projects (Miles & Munilla, 1995; Pushpakumara, 2019). Thus, it is hypothesised that green orientation positively effects green innovation. This hypothesis is established on the understanding that green orientation, characterised by a firm's commitment to sustainability and environmental consciousness, facilitates the adoption and development of green innovations. These innovations, in turn, enrich operational efficiencies and reduce environmental impacts, thereby subsidising long-term sustainability and competitive advantage. Based on this discussion, we recommend the following hypotheses:

- H4: Corporate social responsibility is positively associated with restaurant financial performance.
- H5: Corporate social responsibility is positively associated with environmental performance.

The relationship between corporate social responsibility and green innovation

Green innovation, which includes improvements in products, services and related processes that reduce emissions and consumption, is critical for achieving environmentally sustainable growth in the hospitality industry (Schiederig, et al., 2012; Gürlek & Koseoglu, 2021). It is indispensable for long-term success by retaining energy-efficient methods, fostering environmental preservation and waste recycling, and mitigating pollution (Yang et al., 2021). The objective is to create an ecosystem that reduces energy consumption, improves resource utilisation, manages emissions and recycles waste, eventually leading to a pollution-free environment and enhanced organisational performance (Wang et al., 2022). While corporate social responsibility (CSR) has been shown to improve eco-innovation performance and decrease emissions through increased environmental awareness (Gordon et al., 2012; Yuan & Cao, 2022), the direct assessment of CSR's impact on green innovation remains underexplored (Kraus et al., 2020). Therefore, it is hypothesised that green innovation positively influences organisational performance.

- H6: Corporate social responsibility is positively associated with green innovation.

The relationship between green innovation and performance

Green innovation is important for restaurants to address environmental challenges, preserve a competitive edge and preclude customer dissatisfaction (Chou et al., 2012). It augments environmental management performance by following environmental regulations and constructing a viable green business initiative (Menghwar & Daood, 2021). Numerous studies have established that green innovation positively influences organisational performance across different domains. Evidence shows that green innovation can enrich performance in organisations engaged in production or services (Zhang et al., 2019). Chen's (2008) study revealed that both process and product innovation significantly influence an organization's environmental performance . Wang et al. (2022) further proved a substantial relationship between green innovation and environmental performance, underlining that green innovation expands environmental outcomes. According to Roper and Tapinos (2016), realising green objectives requires continuous investment in strategic areas and determined efforts to avoid negative impacts on financial performance. In spite of the recognised benefits, only a few studies have examined the reciprocal impact of green innovation on both environmental and organisational financial performance in the restaurant industry. Therefore, it is hypothesised that green innovation positively impacts both environmental and financial performance in restaurants.

- H7: Green innovation is positively associated with restaurant financial performance
- H8: Green innovation is positively associated with environmental performance.

Green innovation as mediator

However, an intermediary mechanism is mandatory to transform green orientation (GO) into beneficial and ecologically friendly eateries. Restaurants must validate their innovative capabilities to effectively translate their green emphasis into actual business attainments and ensure long-term performance. This suggests that innovative capabilities must affiliate with green initiatives. Green innovation, which integrates environmental regulations into product design, manufacturing and packaging, delivers a competitive advantage (Tariq et al., 2019). It allows businesses to shift their GO regarding environmentally responsible development, gratifying consumer aspirations for sustainable solutions (Jun et al., 2019). Though investing in green technology might be expensive, it compensates for resource inefficiencies produced by pollution (Porter & van der Linde, 1995). While numerous studies have looked at the advantages of environmental efforts and organisational practices, few have studied the direct relationship among GO, corporate social responsibility (CSR), and green innovation (GI). Green market enterprises with GI skills can attain a competitive advantage (Porter & van der Linde, 1995). Furthermore, Nureen and colleagues (2023) established that CSR positively influences green innovation dimensions. Particularly, green innovation mediates the relation between green resource management and environmental performance in small and medium-sized businesses. This mediating influence of green innovation is validated by research presenting a sequential relationship between CSR, GO, green innovation and business performance (Homayoun et al., 2023). Accepting a transitional method strengthens the mediation hypothesis and highlights the essential significance of green innovation (Rasouli et al., 2022). Hence, it is hypothesised that green innovation mediates the association between green orientation and both environmental and financial performance in restaurants.

- H9: Green innovation significantly mediates the association between green orientation and restaurant financial performance.

- H10: Green innovation substantially mediates the relationship between green orientation and environmental performance.
- H11: Green innovation significantly mediates the association between corporate social responsibility and restaurant financial performance.
- H12: Green innovation significantly mediates the relationship between corporate social responsibility and environmental performance.

Environmental strategy as moderator

Environmental strategy (ES) refers to organisational efforts to cut environmental, operational and production impacts through numerous initiatives (Albino et al., 2009). These initiatives, which comprise programmes and regulations, work to to accelerate product development while encouraging sustainable energy consumption and effective waste management (Bansal & Roth, 2000). Rising concerns and external pressures have forced organisations to adopt and implement ES practices (Hart & Dowell, 2011) essential to improved environmental performance (Rodrigue et al., 2013). Incorporating ecological factors into operational plans confirms that environmental activities are important for long-term sustainability, impacting business performance (Latan et al., 2018; Cao & Chen, 2019). Nonetheless, the direct impact of ES on business performance remains unclear (Li et al., 2016). Some studies recommend intermediate elements that link ES to company performance (Ateş et al., 2012), however, the results are unconvincing (Dai et al., 2017). Environmental strategy may act as a moderator, encouraging an association with green innovation (GI), environmental performance (EP) and firm performance (FP) (Ahmad,et al., 2018). Accordingly, ES has the potential to regulate the interaction of GI, EP and FP. Grounded on these results, it is hypothesised that ES moderates the associations relating GI, EP and FP.

- H13: Environmental strategy significantly moderates the association between green innovation and environmental performance.
- H14: Environmental strategy significantly moderates the relationship between green innovation and restaurant financial performance.

Methodology

A survey was administered across a diverse range of restaurants in Pakistan, including Monal Restaurant, The Mughal Court, Khan Baba Restaurant, Fujiyama Restaurant, Café Aylanto, Bon Vivant Palais and Paola's Cosa Nostra. These restaurants were chosen due to their implementation of environmentally friendly practices and acknowledgement, as ecologically determined within the hospitality sector. This selection aimed to be broadly representative of sustainability endeavours within the industry. A questionnaire was circulated to frontline restaurant employees between June and August 2023. Out of 450 circulated questionnaires, 283 valid responses were received, offering a robust empirical dataset for analysing the theoretical framework and examining the hypotheses. To discuss potential biases related with self-reported data, respondents were guaranteed anonymity to encourage honest responses, and the questionnaire included cross-validation items. Data were triangulated with management reports and environmental audit data where possible. To measure the key notions of "environmentally conscious organisation" and "eco-friendly innovation", recognised measurement scales were engaged, with necessary amendments made to suit the local perspective. These modifications were made by associating the scales with local cultural and operational specifics, as well as augmenting item clarity for respondents. The modified scales were validated through pre-testing, reliability analysis and factor analysis, validating their reliability and validity for this study. *Environmentally conscious organisation* was calculated using variables that replicate the organisation's commitment to sustainability. Key indicators included sustainable practices, such as the frequency of exploiting renewable resources, efforts in waste reduction and energy efficiency measures, as well as the existence and implementation of formal environmental policies and programmes. Sample questionnaire items were: "How frequently does your restaurant use renewable resources in its operations?"; "What measures are in place to decrease waste and improve energy efficiency?"; and "Does your restaurant have recognised environmental policies? If so, how are they implemented?".

Eco-friendly innovation was evaluated based on the expansion and implementation of novel products, services, or processes that moderate environmental harm. Key indicators comprised the use of renewable materials, energy efficiency innovations, and waste reduction innovations. Sample questionnaire items included: "What proportion of your restaurant's products are made from renewable materials?"; "What innovations has your restaurant undertaken to develop energy efficiency?"; and "How efficient are the strategies your restaurant uses to reduce waste and enhance recycling?".

Table 1 provides a summary of the participants' demographic characteristics, containing variables such as age, gender and service period, to provide context and guarantee that the findings are appropriately interpreted.

Measurement

Five Likert items were used to assess the responses across all scales, varying from strongly disagree (1) to strongly agree (5). In Figure 1, the hypotheses are displayed along with the model. Four items were derived from Papadas et al. (2017), which were tailored to fit the context of our study population, confirming relevance and clarity for our respondents. Eight items borrowed from Asadi et al. (2020), Xu et al. (2021) and Yi et al. (2021) were used to evaluate performance, distributed into financial performance and environmental performance. These items were preferred due to their validated reliability and applicability in related contexts. A seven-item scale established by Huang and Li (2017) and Tseng et al. (2013) was employed to evaluate green

TABLE 1: Descriptive statistics (*N* = 283)

Variable		Frequency	Per cent
Sex	Male	195	69
	Female	88	31
Age	<29 years old	120	42.5
	29–39 years old	98	34.5
	40–50 years old	54	19
	>50 years	11	4
Service period	<5 years	130	46
	5–10 years	96	34
	11–15 years	42	15
	>15 years	14	5

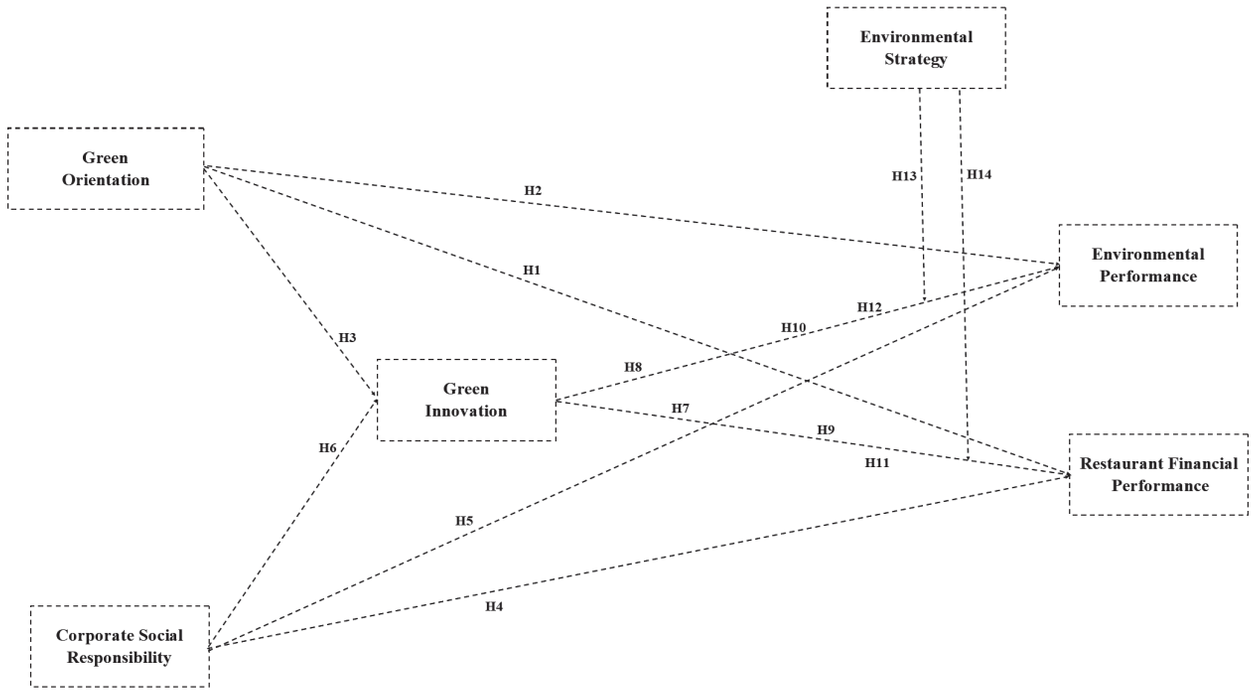

FIGURE 1: Conceptual model

innovation. These items were preferred for their comprehensive analysis of green innovation dimensions and adapted to match our study's demographic profile. Items associated with environmental sustainability were derived from Banerjee et al. (2003), echoing key aspects of environmental practices. Adjustments were made to confirm that these items were understandable and appropriate to our participants. Corporate social responsibility was assessed based on six elements from Alvarado Herrera (2008). These items were adapted to associate with the specific characteristics of our study sample, augmenting the precision and importance of the responses.

Data analysis

To assess the hypotheses, we used partial least squares structural equation modelling (PLS-SEM), a method well-suited for exploring complex composite models, chiefly in research with exploratory or predictive objectives (Hair Jr. et al., 2021). PLS-SEM was preferred due to its ability to handle smaller sample sizes and its flexibility in model specification, which links with the aims of our study. This method has been developed in numerous fields of tourism research, as established by Selmi et al. (2021). The fundamental argument for choosing PLS-SEM lies in its capability to manage the intricacies of our research model, agreeing for a comprehensive examination of the associations between constructs. This associates directly with our goal of examining the multifaceted interactions in the data and originating actionable insights that can inform business management strategies. By using this method, we confirm an inclusive and nuanced analysis that supports our exploratory and predictive objectives. In our analysis, we followed recognised procedures for verifying scale validity and reliability, as discussed by Fornell and Larcker (1981a) and Kock (2021). We assessed model fit and reliability using the key criteria. The composite reliability of constructs was intended to confirm internal consistency, while convergent validity was considered through average variance extracted (AVE) to validate that indicators were effectively signifying their respective constructs. We engaged Smart-PLS 3 software for the analysis, which simplified vigorous estimation and validation of our model. By following these procedures, we ensured the transparency and replicability of our findings.

Findings

Common method bias (CMB)

Since the questionnaire was centred on self-reports, there was a likelihood that common method bias (CMB) could affect the results. To check for CMB, we cast-off the Harman single-factor test, a method indicated by Podsakoff et al. (2003). This test helps establish if a single factor accounts for a large percentage of the variance in the data, which would specify the presence of CMB. In our argument, the test demonstrated that only 32.93% of the variance was described by one factor, which is below the 50% threshold generally used to recognise CMB. This suggests that CMB is not a substantial issue in our data, and we can reasonably state that our results are not biased by this factor.

Measurement model

To evaluate our proposed model, we organised a confirmatory factor analysis (CFA), a method used to test whether our data associate with the anticipated patterns (Hair et al., 1998). We evaluated the model based on three main criteria: composite validity, average variance extracted (AVE) and Cronbach's alpha. Composite validity quantifies how well a set of indicators signifies a specific construct. In our analysis, we included the outer loadings of each construct expending the partial least

squares algorithm. Table 2 displays that all the measures met the suggested thresholds: Cronbach's alpha was above 0.7, and AVE surpassed 0.5, demonstrating that our constructs are reliable and valid (Nunnally & Bernstein, 1978; Hair Jr. et al., 2021). We also assessed item-loading factors, finding that each item had a loading factor greater than 0.7, which determines strong associations between the items and their respective constructs. To certify convergent validity, we examined Cronbach's alpha, composite reliability (CR) and AVE values. As summarised in Table 2, these values all exceeded the thresholds of 0.7 for Cronbach's alpha and CR, and 0.5 for AVE, confirms good convergent validity (Nunnally & Bernstein, 1978; Fornell & Larcker, 1981b). Moreover, we evaluated internal consistency using rho indices, which presented values above 0.7, further supporting the reliability of our model (Dijkstra & Henseler, 2015). Overall, the CFA results show that our model is both reliable and valid, with all measures mirroring the fundamental constructs consistently.

TABLE 2: Construct validity

Construct	Items	Factor loading	α	rho_A	CR	AVE
Environmental performance	EP1	0.865	0.894	0.899	0.927	0.76
	EP2	0.88				
	EP3	0.82				
	EP4	0.919				
Green orientation	GO1	0.788	0.889	0.917	0.921	0.746
	GO2	0.871				
	GO3	0.907				
	GO4	0.884				
Green innovation	GI1	0.791	0.842	0.851	0.893	0.676
	GI2	0.84				
	GI3	0.795				
	GI4	0.861				
Financial performance	FP1	0.807	0.737	0.741	0.85	0.654
	FP2	0.803				
	FP3	0.817				
Corporate social responsibility	CSR1	0.733	0.845	0.852	0.886	0.567
	CSR2	0.771				
	CSR3	0.769				
	CSR4	0.806				
	CSR5	0.833				
	CSR6	0.789				
Environmental strategy	ES1	0.909	0.872	0.873	0.921	0.796
	ES2	0.873				
	ES3	0.893				

Discriminant validity examines how well-observed measurements of individual constructs replicate their constructs (Hair Jr. et al., 2017). The Fornell-Larcker criterion is a widely used method to determine the discriminant validity of measurement models. This criterion states that a construct's correlation with other constructs should be more significant than the square root of its AVE (Fornell & Larcker, 1981b). Heterotrait-monotrait criteria were also used to assess discriminant validity. When the Heterotrait-Monotrait ratio is < 0.90, it verifies the discriminant validity of the two reflective constructs (Rasouli et al., 2022). Table 3 illustrates that the indicators associated with each construct demonstrate the highest correlation coefficients with their respective constructs, whereas the correlation coefficients of other constructs are the lowest. In conclusion, the research model demonstrated strong discriminant validity (Figure 2).

Structural model results

Bootstrapping is the optimal method for testing the mediating effect because it provides favourable statistical results (Preacher & Hayes, 2008). To assess direct effects, the bootstrapping method in Smart PLS was used (5 000 subsamples). Green

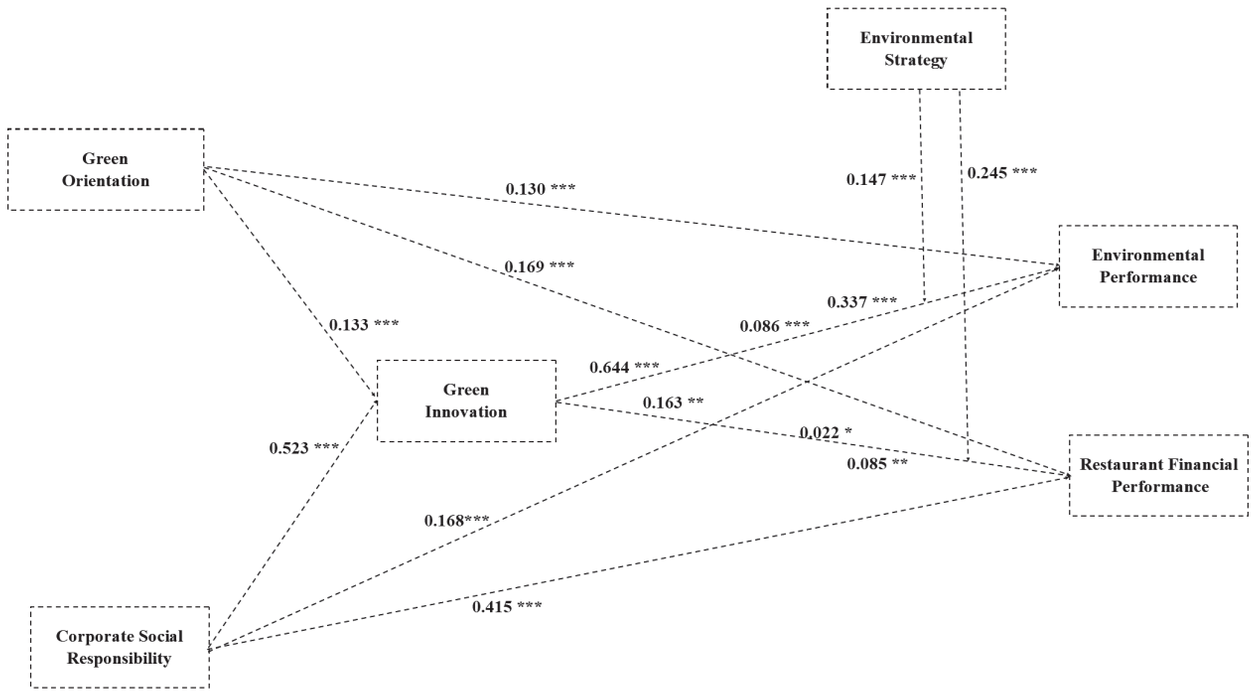

FIGURE 2: Conceptual model with beta values

TABLE 3: Discriminant validity

Construct	EP	GO	GI	FP	CSR
EP	0.872				
GO	0.344	0.864			
GI	0.772	0.266	0.822		
FP	0.48	0.318	0.439	0.809	
CSR	0.56	0.254	0.557	0.548	0.753
Heterotrait-monotrait ratio (HTMT)					
EP	-				
GO	0.373	-			
GI	0.857	0.276	-		
FP	0.588	0.37	0.544	-	
CSR	0.639	0.272	0.654	0.69	-

orientation (GO) significantly affected FP ($\beta = 0.169$, $p < 0.05$), EP ($\beta = 0.130$, $p < 0.05$), and GI ($\beta = 0.133$, $p < 0.05$), supporting H1, H2 and H3. Furthermore, CSR significantly affects FP ($\beta = 0.415$, $p < 0.05$), EP ($\beta = 0.168$, $p < 0.05$), and GI ($\beta = 0.523$, $p < 0.05$), supporting H4, H5 and H6. GI significantly affected FP ($\beta = 0.163$, $p < 0.05$) and EP ($\beta = 0.644$, $p < 0.05$), supporting H7 and H8 respectively. The adjusted R^2 values for GI, EP and FP were 0.327, 0.636, and 0.353 respectively (Table 4).

The product coefficient method technique was used to investigate GI's mediating role, and the significance of the indirect impact was determined by exercising bias-corrected bootstrap confidence intervals (CIs) (Rasoolimanesh et al., 2021a). Table 5 displays the moderating role of GI on the link between GO-EP-FP and CSR-EP-FP. Specifically, GI mediated the associations between GO and EP (ß = 0.086, $t = 2.487$, $p = 0.007$) and between GO and FP (ß = 0.022, $t = 1.339$, $p = 0.081$), supporting H9 and H10. Furthermore, GI also mediated the associations between CSR and EP (ß = 0.337, $t = 5.941$, $p < 0.001$) and between CSR and FP (ß = 0.085, $t = 1.913$, $p < 0.001$), which supports H11 and H12.

TABLE 4: Structural equation modelling (SEM)

Path	β	SD	*t*-value	*p*-value	Pass or not
GO → FP	0.169	0.055	3.078	<0.001***	Pass
GO → EP	0.130	0.035	3.708	<0.001***	Pass
GO → GI	0.133	0.053	2.528	0.006***	Pass
CSR → FP	0.415	0.065	6.426	<0.001***	Pass
CSR → EP	0.168	0.053	3.148	0.001***	Pass
CSR → GI	0.523	0.075	6.96	<0.001***	Pass
GI → FP	0.163	0.079	2.072	0.019**	Pass
GI → EP	0.644	0.041	15.572	<0.001***	Pass

***Significant at the 1% level
**Significant at the 1% level

TABLE 5: Mediation-moderation results

	β	SD	*t*-value	*p*-value	Pass or not
Mediation results					
GO → GI → EP	0.086	0.034	2.487	0.007***	Pass
GO → GI → FP	0.022	0.016	1.339	0.081*	Pass
CSR → GI → EP	0.337	0.057	5.941	<0.001***	Pass
CSR → GI → FP	0.085	0.045	1.913	0.028**	Pass
Moderation results					
(GI→EP) × ES	0.147	0.036	4.149	<0.001***	Pass
(GI→FP) × ES	0.245	0.043	5.848	<0.001***	Pass

***Significant at the 1% level
**Significant at the 1% level

To explore the moderating impact, we employed the interaction effect methodology (Rasoolimanesh et al., 2021b). By noticing that the *t*-statistic surpasses 2.57 at a confidence level of 0.01 for H13 and H14, it is possible to confirm the moderating effect of ES on the link between GI and EP. Figures 3 and 4 show that when the ES is raised compared to when it is diminished, there is a more prominent link between GI and EP and between GI and FP (Table 5).

The effect size and predictive relevance

By linking the blindfolding method to a considerable and complex model, the value of Q^2 evaluates its predictive validity; a $Q^2 > 0$ indicates that the model is predictive (Cohen, 1988) and shows a moderate effect size (Chin, 1998). Categorically, the f^2 values for all the related associations lie within the threshold (Table 6).

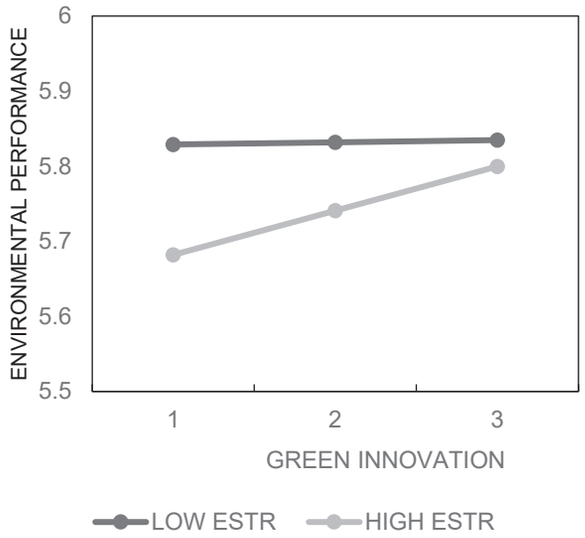

FIGURE 3: Effects of ES on EP (H13)

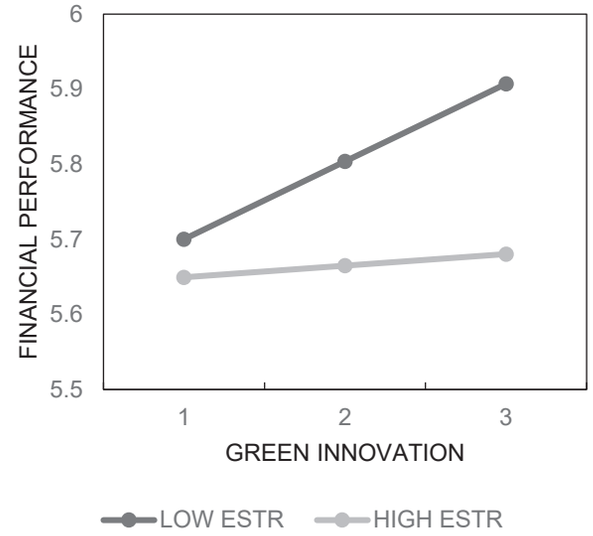

FIGURE 4: Effects of ES on FP (H14)

TABLE 6: Results of Q^2 and f^2

Endogenous variable	Q^2	R^2	Exogenous variable	Effect size f^2
GI	0.189	0.327	GO	0.025
			CSR	0.381
EP	0.439	0.636	GO	0.042
			GI	0.766
			CSR	0.053
FP	0.196	0.353	GO	0.040
			GI	0.028
			CSR	0.180

Discussion and conclusion

This study uncovered the impacts of corporate social responsibility and green orientation on restaurant performance using a broad and distinctive methodology. Numerous studies have evaluated the influence of GO and CSR on environmental performance and financial performance (FP) (e.g. Ang et al., 2022; Makhloufi et al., 2022; Borah et al., 2023; Guan et al., 2023). Nevertheless, this study distinguished performance into two independent components associated to the environment and the organisation, acknowledging for a more nuanced analysis. We observed the related effects of CSR and GO on EP, FP and GI, as anticipated by hypotheses H1 to H6, and concentrated the role of GI as a mediator and environmental strategy as a moderator in key associations (H7–H14). A significant outcome of this research is its focus on Pakistan's food service sector, a background often overlooked in the present literature. By indicating this specific context, our study discusses the unique challenges and opportunities present in developing countries, supporting a broader understanding of CSR and GO in these environments. Furthermore, our approach of selecting the foremost restaurants that demonstrate best practices adds another layer of uniqueness, as it highlights successful strategies that can serve as benchmarks for other businesses in related contexts. The results showed that GO positively influenced both EP and FP of restaurant performance (H1 and H2), consistent with previous studies (Dean & McMullen, 2007; Jiang et al., 2018; Makhloufi et al., 2022). This influence can be recognised in GO's initiatives encouraging environmentally responsible practices and boosting innovation. For example, energy efficiency, waste reduction and sustainable funding initiatives can interest environmentally conscious customers, reinforce brand loyalty and reduce operational expenses. Restaurants applying these practices may experience amplified customer satisfaction and loyalty, thereby improving their financial performance. Additionally, GO directly influenced GI (H3), highlighting the role of GO in augmenting GI, FP, and EP by leveraging creative solutions for environmentally friendly products and services (Borah et al., 2023). Similarly, CSR was essential for enhancing restaurant performance (H4, H5), aligning with earlier findings (e.g. Okafor et al., 2021; Novitasari et al., 2023; Zhou et al., 2023), and had a direct effect on GI (H6) (Yuan & Cao, 2022).

Our findings focus on the beneficial effects of GI on EP and FP, with important mediating roles in the association between GO, FP, and EP (H7–H12). Implementing GI, like water-saving devices or energy-efficient lighting, can lower resource use, decrease environmental footprint and advance financial performance. For example, restaurants with eco-friendly facilities and sustainable practices may attract sustainability-minded customers, raise revenue, and enhance customer satisfaction. In addition, GI can cement the way for developing new business models and strategies associated with sustainability goals, permitting restaurants to gain a competitive advantage in the market. The study also found that ES substantially moderates the relationship relating GI and EP (H13, H14), specifying that effective ES fosters green practices, enriching GI's positive influence on performance. Hart (1995) recommended that organisations should use waste reduction, sustainable development and product stewardship strategies to accomplish a competitive advantage. From this outlook, we studied how ES could improve restaurant performance. Numerous studies have revealed that ES enriches a firm's financial performance (Dai et al., 2017). We advocate that a company with applicable ES deepens the associations between GI, EP, and FP by developing green practices. In our study, we established that the active application of ES works as a positive moderator of GI's influence on both EP and FP.

In summary, this study provides valuable insights into leveraging CSR, GO and GI to augment restaurant performance in Pakistan, indicating how sustainable practices and strategic environmental management can generate better financial and environmental consequences. By adopting these practices, restaurants can accomplish noteworthy improvements in both financial and environmental performance, achieving a competitive advantage in the market. The integration of practical examples, such as employing energy-efficient technologies and sustainable sourcing, establishes the real-world applications and benefits of our outcomes, making the discussion more impactful and appropriate to the industry.

Theoretical contributions

By filling a vacuum in empirical research, this study improves our perspective on environmental management in the food and service sectors. Given the scarcity of research on the association between performance, green orientation (GO) and CSR in the hospitality industry, this study adds to our understanding of the food and services sector and how GO and CSR influence EP and FP in hospitality management. More importantly, research on the elements that impact pro-environmental behaviour is lacking. As a result, the current study adds to our understanding of pro-environmental attitudes and activities, particularly in the context of the hospitality industry, with an emphasis on ES and GI (Irani et al., 2022). However, despite the recognition that GO and CSR improve EP and FP in the hospitality sector, few studies have explored the indirect consequences of GO and CSR on EP and FP in this industry using GI and ES as precursors. Consequently, this study adds to our understanding of the effects of CSR and GO on EP and FP in this firm by providing awareness of the processes through which GO and CSR influence each other. Given our findings on the direct and indirect effects of GI, this study highlights the importance of building a complete framework to investigate the proposed model. Furthermore, this study adds to the existing information base by examining the issues of FP and EP in the service sector, with a particular focus on restaurants. Furthermore, environmentally aware innovation and environmental factors have received less attention in service management. This study examines GI and ecological problems through the lens of environmental strategies in the service industry. As a result, we have better knowledge of their functions as mediators and

moderators affecting EP and FP in the service sector, with a specific emphasis on the food and services industry.

Practical implication for the restaurant Industry

The findings from the structural model have numerous important insights for the restaurant industry, underlining the substantial benefits of adopting sustainable practices. First, the robust positive association between green orientation and environmental performance emphasises the importance of incorporating green practices into restaurant operations. Implementing energy-efficient systems and decreasing waste can lead to significant cost savings and improved public perception, providing a competitive edge. For instance, installing LED lighting and energy-efficient appliances, alongside reducing single-use plastic usage and using biodegradable packaging, can decrease both energy consumption and waste disposal costs. While initial investments may be compulsory, these practices can harvest long-term financial benefits associated with the growing consumer inclination for environmentally responsible businesses. Moreover, the significant influence of corporate social responsibility on both green innovation and financial performance highlights the value of embedding CSR into business strategies. Restaurants that engage in CSR are likely to see improved innovation in green technologies, leading to better financial outcomes. For example, CSR-driven investments in sustainable sourcing and waste management can substitute innovation in eco-friendly practices, resulting in operational efficiencies and enhanced customer loyalty. Committing to sustainable sourcing from local and organic suppliers and investing in novel waste management solutions can increase both the environmental and financial performance of the restaurant. The mediation analysis specifies that green innovation is a precarious factor in translating green orientation and CSR into developed environmental and financial performance. While green innovation plays a lesser role in mediating the correlation relating green orientation and financial performance, it connects CSR to financial outcomes. This suggests that nurturing a culture of innovation driven by CSR initiatives can augment both environmental and financial results. Encouraging employees to develop eco-friendly innovations and investing in green technologies can lead to healthier environmental outcomes, such as carbon emissions and lower water usage, while also cultivating financial performance through cost savings and new revenue streams. Additionally, the moderation analysis shows that the usefulness of green innovation in improving environmental and financial performance is significantly strengthened by robust environmental sustainability efforts. Stronger environmental sustainability practices increase the benefits of green innovation. Therefore, restaurants should incorporate comprehensive environmental sustainability strategies to amplify the positive impact of green innovations on performance outcomes. Developing comprehensive sustainability plans, involving stakeholders in sustainability initiatives, and setting motivated goals like achieving zero waste can further strengthen the restaurant's competitive position by attracting eco-conscious consumers and increasing the benefits of green innovations. By executing these detailed and actionable recommendations, managers in the restaurant industry can effectively influence green orientation, CSR and green innovation to enrich both environmental and financial performance, eventually gaining a competitive edge in the market.

Limitations and future research direction

Despite its implications, this research has some limitations that should be acknowledged. First, the study concentrated exclusively on the food and services industry, which may limit the generalisability of the findings in other sectors. Future research should develop the investigation of this model in a variety of industries, such as the automotive and fashion industries, to establish if the relationships observed hold in diverse contexts. Second, while this study takes a holistic approach to green innovation, it opens avenues for further investigation of other GI factors. Future studies should examine the effects of specific GI factors and their interactions. Third, understanding the interrelations among green orientation, corporate social responsibility and GI, and their collective impact on hotel performance, is important. Prior research shows that GO and CSR positively influence environmental performance and financial performance, with GI strengthening these effects. Furthermore, environmental sustainability uncovers the moderating role of GO and CSR in corporate environmental management and sustainable development. Future research should further investigate these moderating interactions relating to GI, EP, and FP, and investigate how these dynamics vary in different industries and cultural contexts. By addressing these limitations, future studies can gain a more inclusive understanding of the complex associations between these variables and augment the generalisability of the findings.

Note

1 Abbreviations used:

CSR	Corporate social responsibility
EP	Environmental performance
ES	Environmental strategy
FP	Financial performance
GO	Green orientation
GI	Green innovation

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