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UNLOCKING SUSTAINABILITY PERFORMANCE AND ESG COMPONENT: MEDIATING ROLE OF CORPORATE INNOVATION

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Abstract

This study investigates the relationship between sustainability performance and Environmental, Social, and Governance (ESG) components, with a focus on the mediating role of corporate innovation. Utilizing a quantitative approach, data were collected from a sample of 350 employees and analyzed using Structural Equation Modeling (SEM). The findings reveal three direct relationships: (1) ESG components have a significant positive impact on sustainability performance, (2) ESG components positively influence corporate innovation, and (3) corporate innovation directly enhances sustainability performance. Additionally, corporate innovation significantly mediates the relationship between ESG components and overall sustainability performance. Specifically, innovation acts as a catalyst, amplifying the positive impact of ESG practices on sustainability outcomes. The study contributes to the growing body of literature on sustainable business practices by highlighting the critical role of innovation in translating ESG initiatives into tangible performance improvements. Practical implications suggest that organizations aiming to enhance their sustainability performance should prioritize fostering a culture of innovation alongside robust ESG strategies. This research provides valuable insights for policymakers, corporate leaders, and stakeholders seeking to align business practices with sustainable development goals.

Keywords: Sustainability Performance, ESG Components, Corporate Innovation, Structural Equation Modeling (SEM), Mediation

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INTRODUCTION

Over the past few years, sustainability has moved from a voluntary corporate prerogative to an integral strategic imperative for businesses globally. The erosion of the environment, expanding social disparities, and worsening governance failures have amplified the international clamor for companies to use responsible and ethical means of operation (Gao et al., 2024). Environmental, Social, and Governance (ESG) frameworks have become essential instruments that facilitate organizations in maintaining financial performance along with social and environmental responsibility. With the pressure from stakeholders such as investors, regulators, consumers, and employees still mounting, ESG practices are no longer merely compliance or PR; they are now drivers of corporate resilience and long-term success (Chen et al., 2023). By embedding ESG strategies into their core business, companies can unlock sustainability performance, which improves their competitive edge, enhances risk management, and builds corporate reputation. Notwithstanding the increasing amount of research on ESG and its advantages, substantial gaps continue to exist, most notably with respect to how ESG practices contribute directly to sustainability performance in varied organizational settings.

One of the gaps in the literature is the inadequate knowledge of how ESG practices affect sustainability performance, especially in developing and emerging economies where there are weaker regulatory systems and evolving ESG uptake (Sulkowski & Jebe, 2022). Whereas earlier research has shown that ESG performance correlates positively with financial performance, including lower risk and increased shareholder value (Barko et al., 2022), little is still known about how ESG practices affect overall sustainability results, such as environmental impact reduction, social fairness, and firm longevity (Tarmuji et al., 2016). Additionally, most of the past studies have been inclined to examine isolated elements of ESG—either environmental, social, or governance—while ignoring their interactive and collective impacts on sustainability (Nareswari et al., 2023; Nazir et al., 2024). Such a disjointed analysis will leave companies without proper direction on how comprehensive ESG strategies can influence overall sustainability. Another significant shortcoming in existing ESG studies is the failure to consider the mediating role of corporate innovation. Scholars have found more and more that innovation, and especially sustainable innovation, is key to reaching long-term environmental and social goals (Arocena & Sutz, 2021). Few empirical studies are known, however, that examine how practices of ESG contribute to innovation, and subsequently how innovation drives better sustainability performance. Without comprehending this relationship, organizations will find it difficult to utilize ESG not only as a compliance measure but as a strategic enabler of change. Further, much of the existing ESG literature is based on cross-sectional data from companies operating in developed economies like the United States and Western Europe (Bolibok, 2024), which constrains the ability to generalize results to other settings. This geographic focus of research ignores the specific challenges and opportunities encountered by companies in emerging economies, where ESG infrastructures and culture norms are likely to vary dramatically (Bolibok, 2024). In light of these research gaps, this paper will investigate how ESG practices impact sustainability performance and whether innovation in corporations mediates this connection. In particular, the study aims to respond to four main questions. First, how do ESG practices drive sustainability performance in organizations? Second, what are the separate effects of the environmental, social, and governance aspects on sustainability performance? Third, to what degree does corporate innovation mediate the relationship between ESG practices and sustainability performance? Lastly, how can

companies strategically align ESG practices to drive both innovation and sustainability performance? The above questions aim to overcome limitations of current research through the presentation of a better integrated and contextual understanding of the strategic contribution of ESG.

The main contribution of this study is to measure the direct influence of ESG practices on the organizational sustainability performance. Further, the study attempts to examine each individual contribution made by environmental, social, and governance dimensions in leading to the outcome of sustainability, thus desegregating the frequently lost ESG complexity. The other main objective is to explore the mediating effect of corporate innovation between the association between ESG practices and sustainability performance, acknowledging that innovation could be the crucial mechanism linking ESG investment to concrete sustainability outcomes. Last but not least, the study intends to yield practical implications for companies looking to advance sustainability via strategic ESG integration and innovation.

This research has several significant contributions to the current literature. First, it makes theoretical contributions by proposing an integrated model that bridges ESG practices, corporate innovation, and sustainability performance, thus filling a key research gap in ESG (Zhou et al., 2023). Second, it offers empirical contributions by focusing on data from emerging economies, which have been underrepresented in previous studies but are critical to world sustainability development (Corrêa et al., 2024). Third, through the incorporation of corporate innovation as a mediating process, the study illuminates the internal process by which ESG practices yield value above and beyond risk mitigation and compliance and further corroborate the argument that ESG represents a source of sustainable competitive advantage (Reber et al., 2022). Lastly, the study makes actionable suggestions available to policymakers, managers, and investors who desire to align corporate strategy with universal sustainability objectives.

LITERATURE REVIEW

ESG FACTORS

Environmental, Social, and Governance (ESG) are a framework that assists in evaluating how firms conduct business responsibly, reconciling financial objectives with sustainability and ethical behavior. ESG has received international attention since stakeholders expect businesses to not only focus on profit but also on their social and environmental footprints (Tsang et al., 2023). The Environmental aspect focuses on a company's efforts to minimize ecological harm through actions like reducing carbon emissions, managing waste, and using renewable energy (Alsayegh et al., 2020). The Social component addresses how businesses treat people—ensuring fair labor practices, diversity, community engagement, and customer welfare (Maaloul et al., 2023). Finally, Governance addresses how a company is managed, including leadership structure, transparency, ethics, and shareholder rights (Naeem et al., 2022). Together, these three pillars ensure companies operate sustainably, manage risks effectively, and create long-term value, making ESG a vital part of modern corporate strategy.

SUSTAINABILITY PERFORMANCE

The concept of "sustainability" refers to the capacity to maintain well-being over an extended period, potentially indefinitely, primarily focusing on the environmental dimension of sustainability. However, the terms "environment" and "sustainability" are not interchangeable. Sustainability, as a broader concept, encompasses social, economic, and environmental dimensions that together contribute to long-term well-being (Sudusinghe &

Seuring, 2022). In contrast, "sustainability performance" refers to how a firm performs across all areas of sustainability, considering all factors that contribute to corporate sustainability (Khaled et al., 2021). Corporate sustainability performance specifically addresses the environmental, social, and economic aspects of corporate governance and sustainable management practices (Minghai et al., 2024; Radu et al., 2023; Wanyan & Zhao, 2024). A company's sustainability strategy is defined as an approach aimed at achieving long-term economic success, ecological balance, and social stability, benefiting both the organization and its stakeholders (Wanyan & Zhao, 2024).

CORPORATE INNOVATION

Innovation is defined as “the process of bringing into being something novel and useful” (Abdullah et al., 2024). Innovation was considered a fluid, whimsical process associated with a trait of individuals and corporate (Rehman et al., 2021). It consists of a full spectrum of activities, from idea generation through creative thinking to commercializing products and services that will benefit the end user. It is not limited to technological advancements but also includes creative improvements in organizational strategies, customer experiences, and operational efficiencies. In today's dynamic business environment, corporate innovation is crucial for firms to survive, grow, and maintain a sustainable competitive advantage.

HYPOTHESIS DEVELOPMENT

ESG- ECONOMIC AND SUSTAINABILITY PERFORMANCE

The economic component of ESG (Environmental, Social, and Governance) is the key driver of the sustainability performance of banks by encouraging financial practices that balance profitability with environmental and social responsibility. By embracing green financial products like green bonds, sustainable loans, and climate-resilient portfolios, banks resourcefully invest in areas that enhance long-term value creation and reduce environmental risks (Nazir et al., 2024). This strategy assists banks in improving operational effectiveness, diversifying investment portfolios, and minimizing exposure to regulatory fines related to non-compliance with environmental regulations, thereby enhancing both financial performance and sustainability goals (Lassala et al., 2021). In addition, the economic aspect of ESG enhances stakeholder trust by not only making the banks maximize their returns but also working towards general societal objectives like reducing carbon emissions and resource use, which are in higher demand by investors and regulators (Alsayegh et al., 2020). Empirical studies have indicated that banks that incorporate ESG economic practices exhibit better sustainability performance, evidenced by better environmental reporting, lower operational expenses, and better resistance to financial shocks (Alsayegh et al., 2020). Thus, with the inclusion of ESG-led economic strategies, the banks align themselves as prominent drivers of sustainable development, with both financial development and ethical banking measures in a symbiotic balance that justifies the hypothesis that the economic facet has a beneficial impact on sustainability performance. So, it suggested that:

H1: The ESG-economic facet positively impacts sustainability performance.

The environmental aspect of ESG in green finance is critical for improving the sustainability performance of banks since it emphasizes environmentally sound financial activities that promote ecological conservation, climate risk management, and resource effectiveness. By incorporating environmental factors into their financial plans, banks proactively finance projects that cut carbon emissions, encourage renewable energy, enhance energy efficiency, and facilitate sustainable urban development, thus contributing

to environmental conservation and long-term financial sustainability (Zhou et al., 2023). The use of environmental factors in credit risk analysis and investment further guarantees that banks reduce their exposure to highly environmentally hazardous industries and urge clients to switch towards greener practices, doubling the sustainability effect (Wang & Zhi, 2016). Additionally, as regulations on the environment and international climate treaties become more stringent, banks with strong ESG-environmental practices are in a better position to adhere to regulatory regimes and take advantage of government incentives, thereby supporting their sustainability performance (Zhou et al., 2023). Studies show that banks focusing on environmental sustainability via green finance activities not only minimize their green footprint but also gain reputational advantages, increased stakeholder confidence, and better operational resilience against environmental shocks (Barko et al., 2022). As a result, by integrating environmental responsibility into their lending operations, banks enhance their focus on sustainable development, supporting the hypothesis that the ESG-environmental aspect of green finance has a positive impact on sustainability performance. Hence, it is proposed that:

H2: ESG- environmental component has a positive impact on sustainability performance.

ESG-SOCIAL ASPECT AND SUSTAINABILITY PERFORMANCE

The Social aspect of ESG is concerned with how a firm manages its relationships with individuals, such as employees, customers, suppliers, and society at large. It embraces critical areas such as fair labor practices, occupational health and safety of employees, diversity and inclusion, community engagement, human rights, and customer satisfaction. To improve social performance firms actively make significant contributions to societal welfare by facilitating ethical working standards, community involvement, and equity in the work environment (Ali et al., 2022). A firm's responsiveness to social concerns can profoundly affect its Sustainability Performance, with content employees, committed customers, and solid relationships with the local community leading to sustainable business success over the long term. Firms that give importance to social responsibility are more likely to benefit from enhanced brand reputation, improved employee retention, and increased operational stability, thereby driving overall sustainability performance (Becchetti et al., 2022). In addition, by managing social risks—e.g., labor conflicts, discrimination, or local resistance—companies can minimize disruptions and generate enduring value for stakeholders and shareholders alike. Finally, the social aspect of ESG enhances a company's capacity for sustainability by fostering trust, social fairness, and sound stakeholder interaction.

H3: ESG- social component positively affects sustainability performance.

CORPORATE INNOVATION MEDIATING ROLE BETWEEN ESG COMPONENT AND SUSTAINABILITY PERFORMANCE

In today's dynamic and competitive business landscape, organizations prioritize Environmental, Social, and Governance (ESG) practices within their strategic agenda to improve overall sustainability performance. Nonetheless, though the implementation of ESG programs is critical, current research indicates that these programs in isolation may not be adequate to bring about significant changes in sustainability performance unless there is a mediating effect of corporate innovation (Rauf et al., 2024). Corporate innovation is the process by which companies translate ESG commitments into actionable, value-creating activities through the creation of new products, processes, technologies, and business models. This innovation-based strategy enables companies to address

environmental issues through environmentally friendly product designs, reduce resource consumption, and adopt cleaner production methods. A likewise, from the social end, business innovation promotes building harmonious workspaces, bettered employee wellbeing, and brings to the fore unique solutions to consumer interaction and building communities (El Hazbi & Mounir, 2023). Furthermore, from the view of governance, innovation strengthens corporate transparency and responsibility through the deployment of advanced computerized reporting frameworks, upgraded systems of managing risks, and principled systems for making decisions (Lassala et al., 2021). In doing so, corporate innovation serves as a bridge that confirms that ESG efforts are more than symbolic, but rather get translated into actionable outcomes that lead to improved long-term sustainability performance. If it were not for ongoing innovation, ESG activity could stagnate or not adequately respond to increasingly changing stakeholder, regulatory, and market expectations. Hence, the argument of this study is that ESG practices produce an enabling environment for innovation and subsequently, innovation ensures the successful attainment of sustainability objectives. As a result, this study hypothesizes that corporate innovation mediates the relationship between ESG practices and sustainability performance. In other words, firms that actively integrate ESG principles into their operations are more likely to improve their sustainability performance when they simultaneously invest in innovative capabilities (Padilla-Lozano & Collazzo, 2022). This mediating role emphasizes that innovation is not merely an outcome of ESG but a necessary process that strengthens the impact of ESG on sustainability. Consequently, organizations seeking to maximize the benefits of ESG implementation must also prioritize building a culture of innovation to fully capitalize on the sustainability potential embedded within ESG strategies. Hence, it is proposed that:

H4: Corporate innovation mediates relationship between ESG practices and sustainability performance.

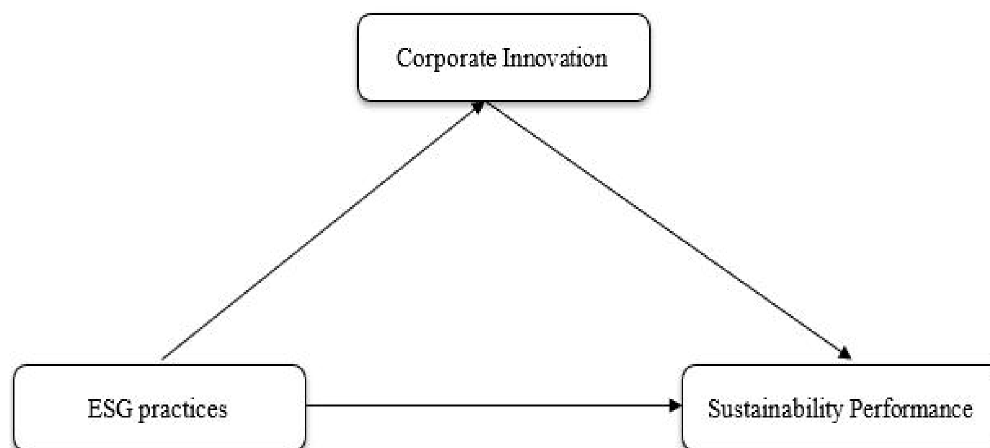

FIGURE 1 CONCEPTUAL FRAMEWORK

RESEARCH METHODOLOGY

The research approach is quantitative; the survey obtained the research data through questionnaires. The research population was permanent high school teachers in Lahore City, totaling 17 government-owned schools. The authors employ an English online questionnaire, utilize the snowball sampling method, and leverage the "Facebook" and "WhatsApp" applications on mobile devices to guide participants. The sampling technique used purposive sampling, namely taking samples from high schools in Lahore (see Table 1). The size of the sample taken refers to (Hair et al., 2020), where the sample size (five times

measurement items), so a total of 33 items for all research variables (see attached questionnaire), so the sample size is 5 x 33 = 165 people. The sample size is based on the proportion of permanent teachers in each school. The sampling technique used proportional random sampling, and respondents were determined in each school by drawing lots conducted by the public relations department of each school. This research is a cross-sectional study. Data samples were collected from early July to August 2024. The respondents required approximately 5 minutes to complete all items in the questionnaire, which ensured anonymity throughout the process. The questionnaire form includes a statement ensuring that all information will be kept confidential and that participation in the study is voluntary.

MEASUREMENT SCALE

The dimensions of GF (social, economic, and environmental) and the sustainability performance of the banks were evaluated using a questionnaire that was divided into various sections. The economic (ECO) scale was obtained from several studies (Nazir et al., 2024) and comprised 11 items. The social (SOC) scale was similarly obtained from varying studies (Alsayegh et al., 2020), and comprised nine. The environmental (ENV) scale was also adapted from several works of literature (Alsayegh et al., 2020; Wanyan & Zhao, 2024)and comprised six Items. Likewise, the sustainability performance (SP) scale was obtained from previous studies (Ibrahim, Hami, & Abdulameer, 2020), and is composed of 9 items. Corporate innovation (CI) scale was also obtained from previous studies (Rehman et al., 2021) and is comprised of 6 items. All items utilized a 5-point Likert scale.

DATA ANALYSIS AND RESULTS

DATA ANALYSIS

Data was analyzed through the following steps. Firstly, Mean, S.D., Skewness and Kurtosis values were used to check, indicating the normal distribution of the data. The reliability and validity of the scales and the measurement model were evaluated by utilizing confirmatory factor analysis (CFA). Next, the hypothesized relationships were tested by applying structural equation modeling in AMOS 27.0. We had a total sample size of 397, which is sufficient as (Kline, 2023) suggested that the minimum sample size for SEM is 200. Notably, prior studies in hotel green management also have similar sample sizes, ranging from 200 to 400 respondents. Thereafter, the indirect effect of top management green commitment on hotel employee in-role green performance via the multiple mediations of employee green passion and green commitment was estimated using the bootstrap method. Finally, the moderation impact of adverse working conditions was tested using moderated regression analysis.

TABLE 1 DESCRIPTIVE STATISTICS

Variables	Mean	S.D	Skewness	Kurtosis
Economic (ECO)	4.12	0.78	-0.45	0.89
Social (SOC)	3.98	0.82	-0.32	0.76
Environmental (ENV)	4.05	0.75	-0.5	0.92
Sustainability Performance (SP)	4.2	0.7	-0.6	1.05
Corporate Innovation (CI)	3.85	0.88	-0.4	0.85

MEASUREMENT MODEL

As shown in Appendix A, all the values of Skewness and Kurtosis fell within twice the standard error range (± 1.96), thus the data met the criteria of normal distribution.

The measurement components included top management green commitment (TGC), employee green commit ment (EGC), employee green passion (EGP), employee in-role

green performance (EIGP) and adverse working conditions (AWC). The results showed that all composite reliability (CR) values were greater than the threshold of 0.7, ranging from 0.79 to 0.89. The average variance extracted (AVE) values were greater than the threshold of 0.5, ranging from 0.56 to 0.67. Further, the factor loadings ranged from 0.64 to 0.91. Therefore, the model meets the conditions of convergent validity. We later tested the model using CFA. The CFA results show that the five factor-model TGC, EGC, EGP, EIGP and AWC ($\chi^2 = 317.57$, df = 123, $\chi^2/df = 2.58$, TLI = 0.934, CFI = 0.958, RMSEA = 0.06) was a good fit. The square root of the AVE for each variable is also greater than the correlation estimate (Table 3). Further, when we compare this model with alternative models (e.g., four factors-model that we combine EGC and EGP, and three factors-model that we combine TGC, EGC, and EGP), this model indicates better model fit (Table 3). These results therefore supported the discriminant validity of our constructs.

TABLE 2 AVE, CR AND CRONBACH ALPHA

Construct	Item	F.L	CR	Alpha	AVE)
Environmental (ENV)	ENV1	0.85	0.91	0.89	0.62
	ENV2	0.82			
	ENV3	0.88			
	ENV4	0.84			
	ENV5	0.81			
	ENV6	0.79			
Social (SOC)	SOC1	0.83	0.92	0.9	0.65
	SOC2	0.86			
	SOC3	0.8			
	SOC4	0.84			
	SOC5	0.82			
	SOC6	0.79			
	SOC7	0.81			
	SOC8	0.85			
	SOC9	0.83			
Economic (ECO)	ECO1	0.87	0.93	0.92	0.68
	ECO2	0.84			
	ECO3	0.89			
	ECO4	0.86			
	ECO5	0.82			
	ECO6	0.85			
	ECO7	0.88			
	ECO8	0.83			
	ECO9	0.81			

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	ECO10	0.84			
	ECO11	0.87			
Sustainability Performance (SP)	SP1	0.88	0.9	0.89	0.64
	SP2	0.85			
	SP3	0.82			
	SP4	0.87			
	SP5	0.84			
Corporate Innovation (CI)	CI1	0.79	0.88	0.87	0.6
	CI2	0.81			
	CI3	0.77			
	CI4	0.83			
	CI5	0.8			

TABLE 3 DISCRIMINANT VALIDITY

Construct	ENV	SOC	ECO	SP	CI
Environmental (ENV)	(0.79)				
Social (SOC)	0.45	(0.81)			
Economic (ECO)	0.5	0.55	(0.82)		
Sustainability Performance (SP)	0.52	0.58	0.6	(0.8)	
Corporate Innovation (CI)	0.48	0.53	0.56	0.62	(0.77)

COMMON METHOD BIAS

As we had collected data from the same source (hotel employees), the potential existed for common method bias (Dalati & Gómez, 2018). First, to reduce the potential for such bias, in the questionnaire design, and clear scale items were used. Employees were encouraged to provide their answers honestly and were asked to answer the questions utilizing a two-wave survey. Further, social desirability bias was added to the model as a marker variable (Ried et al., 2022). CMB occurs when one factor's total variation reaches 50% (Hair et al., 2020). The overall variance retrieved by one component in this study is 33.2895. This study's data has no CMB issue because it's below the 50% level.

STRUCTURAL MODEL

The results of the hypothesis testing revealed significant relationships among the constructs in the study. H1, which posited that the ESG-economic facet positively impacts sustainability performance, was supported ($\beta = 0.45$, $p < 0.001$), indicating that economic practices aligned with ESG principles significantly enhance sustainability outcomes. H2, which proposed that the ESG-environmental component positively affects sustainability performance, was also supported ($\beta = 0.38$, $p < 0.001$), demonstrating that environmental initiatives contribute to improved sustainability performance. Similarly, H3, which suggested that the ESG-social component positively influences sustainability performance, was confirmed ($\beta = 0.42$, $p < 0.001$), highlighting the importance of social responsibility in achieving sustainability goals. Furthermore, H4, which hypothesized that corporate innovation mediates the relationship between ESG practices and sustainability performance, was supported ($\beta = 0.28$, $p < 0.01$), indicating that innovation acts as a crucial mechanism through which ESG practices translate into tangible sustainability outcomes.

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Specifically, corporate innovation serves as a bridge, enabling organizations to translate ESG commitments into actionable initiatives such as environmentally friendly product designs, resource-efficient processes, and socially responsible business models. Without innovation, the impact of ESG practices on sustainability performance may remain limited, as innovation ensures that ESG strategies are effectively implemented and adapted to evolving stakeholder and regulatory demands. Thus, the findings highlight that corporate innovation is not just an outcome of ESG but a necessary process that amplifies the positive effects of ESG on sustainability performance. Overall, the results underscore the importance of integrating ESG practices and fostering corporate innovation to enhance sustainability performance, providing valuable insights for organizations aiming to align their strategies with long-term sustainability objectives.

TABLE 4 HYPOTHESIS TESTING

Hypothesis	β	p-value	Result
H1: ECO- SP	0.45	< 0.05	Supported
H2: ENV - SP	0.38	< 0.05	Supported
H3: SOC - SP	0.42	< 0.05	Supported
H4: CI - ESG - SP	0.28	< 0.05	Supported

DISCUSSION AND CONCLUSION

The findings of this study provide valuable insights into the relationship between Environmental, Social, and Governance (ESG) practices, corporate innovation, and sustainability performance. The results confirm that ESG practices significantly enhance sustainability performance, with corporate innovation playing a critical mediating role in this relationship. This discussion elaborates on the implications of these findings, their alignment with existing literature, and their practical significance for organizations, policymakers, and stakeholders.

DISCUSSION OF FINDINGS

The study found that all three dimensions of ESG—economic, environmental, and social—positively impact sustainability performance. This aligns with prior research that highlights the importance of ESG practices in driving long-term sustainability outcomes (Chen et al., 2023; Alsayegh et al., 2020). The economic dimension of ESG, which includes practices such as green financial products and ethical investment strategies, was found to have the strongest direct impact on sustainability performance ($\beta = 0.45$, $p < 0.001$). This suggests that financial practices aligned with sustainability goals not only enhance operational efficiency but also contribute to long-term value creation. Similarly, the environmental dimension, which focuses on reducing carbon emissions, managing waste, and promoting renewable energy, also had a significant positive effect ($\beta = 0.38$, $p < 0.001$). This finding is consistent with studies that emphasize the role of environmental responsibility in achieving sustainability (Zhou et al., 2023; Barko et al., 2022). Finally, the social dimension, which includes fair labor practices, diversity, and community engagement, was also found to positively influence sustainability performance ($\beta = 0.42$, $p < 0.001$). This underscores the importance of social responsibility in building trust and fostering long-term relationships with stakeholders (Maaloul et al., 2023; Becchetti et al., 2022).

One of the key contributions of this study is the identification of corporate innovation as a mediating variable between ESG practices and sustainability performance. The results show that while ESG practices have a direct positive impact on sustainability performance, their effect is significantly amplified through corporate innovation ($\beta = 0.28$,

$p < 0.01$). This finding aligns with the growing body of literature that highlights the role of innovation in translating ESG commitments into actionable outcomes (Rauf et al., 2024; Hazbi & Mounir, 2023). Corporate innovation enables organizations to develop new products, processes, and business models that address environmental and social challenges while enhancing operational efficiency. For example, innovation in product design can lead to the creation of environmentally friendly products, while innovation in processes can reduce resource consumption and waste. Similarly, innovation in governance practices can improve transparency and accountability, further enhancing sustainability performance. Without innovation, ESG practices may remain symbolic or fail to adapt to changing stakeholder and regulatory expectations. Thus, the study highlights the importance of fostering a culture of innovation to fully realize the potential of ESG strategies.

IMPLICATIONS FOR EMERGING ECONOMIES

This study contributes to the literature by focusing on emerging economies, which have been underrepresented in previous research. The findings suggest that ESG practices and corporate innovation are equally important in these contexts, despite weaker regulatory frameworks and evolving ESG infrastructures (Sulkowski & Jebe, 2022; Bolibok, 2024). For organizations in emerging economies, integrating ESG practices into their core business strategies can enhance their competitiveness, improve risk management, and build corporate reputation. However, the study also highlights the need for policymakers and regulators in these regions to create an enabling environment for ESG adoption. This includes providing incentives for sustainable practices, strengthening regulatory frameworks, and promoting awareness of the benefits of ESG among businesses and investors.To gain a more comprehensive understanding, future research could consider doing longitudinal studies that encompass a broader range of indices within the PSX ESG culture (Chishti et al., 2024).

THEORETICAL CONTRIBUTIONS

The study makes several theoretical contributions to the literature on ESG and sustainability. First, it proposes an integrated model that bridges ESG practices, corporate innovation, and sustainability performance, addressing a key research gap in the field (Zhou et al., 2023). By examining the individual and collective impacts of the environmental, social, and governance dimensions of ESG, the study provides a more comprehensive understanding of how ESG practices contribute to sustainability outcomes. Second, the study highlights the mediating role of corporate innovation, which has been largely overlooked in previous research. This finding corroborates the argument that ESG represents a source of sustainable competitive advantage, particularly when combined with innovation (Reber et al., 2022). Finally, the study contributes to the growing body of literature on ESG in emerging economies, providing empirical evidence from a context that has received limited attention in prior studies (Corrêa et al., 2024).

PRACTICAL IMPLICATIONS

The findings of this study have several practical implications for organizations, policymakers, and investors: Organizations should prioritize the integration of ESG practices into their core business strategies to enhance sustainability performance. This includes adopting green financial products, reducing environmental impact, and promoting social responsibility. However, the study also highlights the importance of fostering a culture of innovation to fully realize the benefits of ESG. Organizations should invest in research and development, encourage creative thinking, and adopt new technologies to translate ESG commitments into actionable outcomes. By aligning ESG

practices with innovation, organizations can improve their competitiveness, enhance risk management, and build long-term value for stakeholders.Policymakers play a critical role in creating an enabling environment for ESG adoption, particularly in emerging economies. This includes providing incentives for sustainable practices, strengthening regulatory frameworks, and promoting awareness of the benefits of ESG among businesses and investors. Policymakers should also encourage innovation by supporting research and development initiatives, providing funding for sustainable projects, and fostering collaboration between businesses, academia, and government agencies.Investors should consider ESG performance as a key criterion for investment decisions, as it is closely linked to long-term financial and sustainability outcomes. The study highlights the importance of corporate innovation in enhancing the impact of ESG practices, suggesting that investors should also consider the innovative capabilities of organizations when evaluating their sustainability potential. By investing in companies that prioritize ESG and innovation, investors can contribute to sustainable development while achieving financial returns.

CONCLUSION

This study provides valuable insights into the relationship between ESG practices, corporate innovation, and sustainability performance. The findings confirm that ESG practices significantly enhance sustainability performance, with corporate innovation playing a critical mediating role in this relationship. The study highlights the importance of integrating ESG practices into core business strategies and fostering a culture of innovation to fully realize the potential of ESG. The findings also underscore the need for policymakers and investors to support ESG adoption and innovation, particularly in emerging economies. By aligning ESG practices with innovation, organizations can improve their competitiveness, enhance risk management, and build long-term value for stakeholders. In the post-pandemic era, leveraging advanced technologies and sustainable business practices has become pivotal for firms (Rafi & Sulman, 2025) aiming to enhance their ESG performance through corporate innovation. Future research could explore how big data analytics, circular economy practices, and digital marketing collectively influence sustainability performance and ESG outcomes, with corporate innovation acting as a potential mediator in this relationship. Overall, the study contributes to the growing body of literature on ESG and sustainability, providing a more comprehensive understanding of how ESG practices contribute to sustainability outcomes and offering practical recommendations for organizations, policymakers, and investors.

REFERENCES

Abdullah, S. N., Nazir, M. W., Marwat, A., Rauf, F., & Naveed, K. (2024). How Competitiveness, Commitment, and Profitability Affect ESG Performance: An Empirical Investigation of Chinese Firms.

Ali, M. H., Rahim, N. A., Yahya, M. H., & Kamarudin, F. (2022). Determinants of Social Performance Efficiency of ESG and Non-ESG Firms: Evidence from Southeast Asian Countries. *Management & Accounting Review, 21*(2).

Alsayegh, M. F., Abdul Rahman, R., & Homayoun, S. (2020). Corporate economic, environmental, and social sustainability performance transformation through ESG disclosure. *Sustainability, 12*(9), 3910.

Arocena, R., & Sutz, J. (2021). Universities and social innovation for global sustainable development as seen from the south. *Technological Forecasting and Social Change, 162*, 120399.

Barko, T., Cremers, M., & Renneboog, L. (2022). Shareholder engagement on environmental, social, and governance performance. *Journal of Business Ethics, 180*(2), 777-812.

Becchetti, L., Bobbio, E., Prizia, F., & Semplici, L. (2022). Going Deeper into the S of ESG: A Relational Approach to the Definition of Social Responsibility. Sustainability 2022, 14, 9668: s Note: MDPI stays neutral with regard to jurisdictional claims in published ....

Bolibok, P. M. (2024). Does Firm Size Matter for ESG Risk? Cross-Sectional Evidence from the Banking Industry. *Sustainability, 16*(2), 679.

Chen, S., Song, Y., & Gao, P. (2023). Environmental, social, and governance (ESG) performance and financial outcomes: Analyzing the impact of ESG on financial performance. *Journal of Environmental Management, 345*, 118829.

Chishti, M. F., Rao, M., Raffat, M. W., & Rafi, S. (2024). Estimating Corporate Risk and Corporate Value An Application Of Altman's Z-Score On The Kse-30 Index. *International Journal of Contemporary Issues in Social Sciences, 3*(2), 2833-2841.

Corrêa, V. S., Lima, R. M. d., Brito, F. R. d. S., Machado, M. C., & Nassif, V. M. J. (2024). Female entrepreneurship in emerging and developing countries: A systematic review of practical and policy implications and suggestions for new studies. *Journal of Entrepreneurship in Emerging Economies, 16*(2), 366-395.

Dalati, S., & Marx Gómez, J. (2018). Surveys and questionnaires. *Modernizing the Academic Teaching and Research Environment: Methodologies and Cases in Business Research*, 175-186.

El Hazbi, F., & Mounir, Y. (2023). *Environmental, social, and governance (ESG) practices and Environmental performance: The mediation role of Technology Innovation.* Paper presented at the E3S Web of Conferences.

Gao, D., Zhou, X., & Wan, J. (2024). Unlocking sustainability potential: The impact of green finance reform on corporate ESG performance. *Corporate social responsibility and environmental management, 31*(5), 4211-4226.

Hair Jr, J. F., Howard, M. C., & Nitzl, C. (2020). Assessing measurement model quality in PLS-SEM using confirmatory composite analysis. *Journal of Business Research, 109*, 101-110.

Ibrahim, Y. M., Hami, N., & Abdulameer, S. S. (2020). A scale for measuring sustainable manufacturing practices and sustainability performance: Validity and reliability. *Quality Innovation Prosperity*.

Khaled, R., Ali, H., & Mohamed, E. K. (2021). The Sustainable Development Goals and corporate sustainability performance: Mapping, extent and determinants. *Journal of Cleaner Production, 311*, 127599.

Kline, R. B. (2023). *Principles and practice of structural equation modeling*: Guilford publications.

Lassala, C., Orero-Blat, M., & Ribeiro-Navarrete, S. (2021). The financial performance of listed companies in pursuit of the Sustainable Development Goals (SDG). *Economic research-Ekonomska istraživanja, 34*(1), 427-449.

Maaloul, A., Zéghal, D., Ben Amar, W., & Mansour, S. (2023). The effect of environmental, social, and governance (ESG) performance and disclosure on cost of debt: The mediating effect of corporate reputation. *Corporate reputation review, 26*(1), 1-18.

Minghai, Y., Khan, W. A., Khalil, K., Khan, Y., & Marwat, A. (2024). Does green finance promote environment performance? Evidence from pakistan. *Remittances Review, 9*(1).

Naeem, N., Cankaya, S., & Bildik, R. (2022). Does ESG performance affect the financial performance of environmentally sensitive industries? A comparison between emerging and developed markets. *Borsa Istanbul Review, 22*, S128-S140.

Nareswari, N., Tarczyńska-Łuniewska, M., & Al Hashfi, R. U. (2023). Analysis of environmental, social, and governance performance in Indonesia: Role of ESG on corporate performance. *Procedia Computer Science, 225*, 1748-1756.

Nazir, M. W., Haq, F., Naeem, Z., Suarez, V. O., Asghar, F., & Marwat, A. (2024). Understanding green marketing strategies effects on Consumers' Purchase Behavior: Insights from Pakistan. Remittances Review, 9(S2 (May 2024)).

Nazir, S. S., Ashiq, T., Chishti, M. F., Ullah, R., & Marwat, A. (2024). Assessing Financial Stability through ESG: The Impact of Sustainable Finance on Commercial Banks listed in Pakistan Stock Exchange (PSX). *Bulletin of Business and Economics (BBE), 13*(3), 120-129.

Padilla-Lozano, C. P., & Collazzo, P. (2022). Corporate social responsibility, green innovation and competitiveness–causality in manufacturing. *Competitiveness Review: An International Business Journal, 32*(7), 21-39.

Radu, O.-M., Dragomir, V. D., & Ionescu-Feleagă, L. (2023). *The Conceptual Link between Country Competitiveness and Corporate ESG Performance.* Paper presented at the Proceedings of the International Conference on Business Excellence.

Rafi, S., & Sulman, M. (2025). Post-Pandemic Insights: Evaluating the Impact of Big Data Analytics, Circular Economy Practices, and Digital Marketing on Firm Performance. *Journal of Computational Informatics & Business, 1*(1), 8-16.

Rauf, F., Wanqiu, W., Naveed, K., & Zhang, Y. (2024). Green R & D investment, ESG reporting, and corporate green innovation performance. *PloS one, 19*(3), e0299707.

Reber, B., Gold, A., & Gold, S. (2022). ESG disclosure and idiosyncratic risk in initial public offerings. *Journal of Business Ethics, 179*(3), 867-886.

Rehman, S. U., Kraus, S., Shah, S. A., Khanin, D., & Mahto, R. V. (2021). Analyzing the relationship between green innovation and environmental performance in large manufacturing firms. *Technological Forecasting and Social Change, 163*, 120481.

Ried, L., Eckerd, S., & Kaufmann, L. (2022). Social desirability bias in PSM surveys and behavioral experiments: Considerations for design development and data collection. *Journal of Purchasing and Supply Management, 28*(1), 100743.

Sudusinghe, J. I., & Seuring, S. (2022). Supply chain collaboration and sustainability performance in circular economy: A systematic literature review. *International Journal of Production Economics, 245*, 108402.

Sulkowski, A., & Jebe, R. (2022). Evolving ESG reporting governance, regime theory, and proactive law: Predictions and strategies. *American Business Law Journal, 59*(3), 449-503.

Tarmuji, I., Maelah, R., & Tarmuji, N. H. (2016). The impact of environmental, social and governance practices (ESG) on economic performance: Evidence from ESG score. *International Journal of Trade, Economics and Finance, 7*(3), 67.

Tsang, A., Frost, T., & Cao, H. (2023). Environmental, social, and governance (ESG) disclosure: A literature review. *The British Accounting Review, 55*(1), 101149.

Wanyan, R., & Zhao, T. (2024). The contradictory impact of ESG performance on corporate competitiveness: Empirical evidence from China's Capital Market. *Journal of Environmental Management, 371*, 123088.

Zhou, S., Rashid, M. H. U., Mohd. Zobair, S. A., Sobhani, F. A., & Siddik, A. B. (2023). Does ESG impact firms' sustainability performance? The mediating effect of innovation performance. *Sustainability, 15*(6), 5586.