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Linking Sustainable Business Strategies to Firm Performance: A Cross-Functional Model of Marketing, Finance, and Innovation

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Abstract: This study investigates how sustainable marketing strategy and sustainable investment strategy influence firm performance, considering the mediating roles of perceived corporate social responsibility (CSR) and sustainability-driven innovation, and the moderating role of digital transformation. The research aims to provide a comprehensive framework linking sustainability strategies to performance outcomes within firms operating in a developing economy context. A quantitative approach was employed, using a structured questionnaire administered to 345 mid- to senior-level managers in Pakistani firms. Validated scales from previous research were adapted for measurement. Data were analyzed using SmartPLS 4, applying Partial Least Squares Structural Equation Modeling (PLS-SEM) to test the proposed direct, indirect, and moderated relationships. The results indicate that both sustainable marketing and investment strategies have a significant positive impact on firm performance. these relationships are significantly mediated by perceived CSR and sustainability-driven innovation. furthermore, digital transformation positively moderates the effects of both mediators on performance, enhancing the strength of these indirect relationships. This study integrates sustainability, innovation, and digital transformation into a unified performance model, extending the Resource-Based View and Stakeholder Theory. It provides valuable insights for managers seeking to align sustainability initiatives with digital capabilities to enhance firm competitiveness and long-term value creation.

Keywords: Sustainable Marketing Strategy, Sustainable Investment Strategy, Firm Performance, Corporate Social Responsibility, Digital Transformation.

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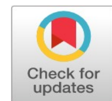

INTRODUCTION

Over the past few years, the sustainability trend has revolutionized business practices globally, so that now firms started incorporating sustainable investment and marketing tactics to ensure better long-term performance (Gleim et al., 2023). Green marketing strategy entails systematic support for environmentally friendly products and companies that exhibit social and environmental responsibility, like green branding and sustainable product development, to capture the growing consumer demand for ethical consumption (Ismail et al., 2023). At the same time, sustainable investment strategy focuses on capital deployment in activities and assets that are compliant with ESG and thereby maximize responsible business conduct while yielding best financial returns (Halid et al., 2023). The two-way strategic processes represent a paradigm shift from conventional paradigms aimed at profit maximization to stakeholder-inclusive value creation. Companies increasingly see that integrating sustainability into investment and marketing not only satisfies regulatory and public requirements but also makes a significant contribution to competitive advantage and improved firm performance (Ye & Dela, 2023). This study thus examines the interdependent effects of sustainable marketing practices and investment practices on firm performance, and the mediating roles of perceived corporate social responsibility, sustainability-led innovation, and digital transformation in this relationship (Atif et al., 2023).

Large-scale empirical studies have analyzed the influence of sustainable marketing practices on firm performance. Empirical studies have time and again established that companies that use green branding and environmental product promotion are likely to enjoy greater customer loyalty, brand equity, and financial performance (Arachchi & Samarasinghe, 2023). For instance, companies that clearly convey their sustainability efforts have received

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increased consumer trust and payment willingness for a premium price, which is transformed into improved profitability (Lusianti et al., 2024). Sustainable marketing also produces more intense stakeholder involvement and long-term relationships, which translate into consolidated market positioning and robustness (Gleim et al., 2023). This has been affirmed by sustainability investment strategies research, where it is noted that companies that invest in ESG-themed projects possess better risk profiles, lower capital costs, and better stock market performances (Narula et al., 2024). Empirical data has shown that companies with robust ESG behaviors outperform peers on major financial measures like return on assets (ROA) and return on equity (ROE) (Halid et al., 2023). The results capture the financial and strategic advantages of mainstreaming sustainability into investment choices.

Also, there has been a finding that perceived corporate social responsibility (CSR) has emerged as an important mediator in connecting sustainable practice with firm performance. Evidence is clear that CSR perceptions among stakeholders amplify the impact of sustainability practice through the strengthening of corporate reputation, consumer trust, and employee loyalty (Oduro et al., 2024). Those companies that are viewed as socially responsible are able to utilize this intangible asset to create competitive strength and sustain high performance (Raza et al., 2023). Sustainability-innovation, or creating new eco-efficient products and processes, is also a critical mediating construct. There is evidence that this innovation helps companies become proactive in addressing environmental concerns as well as customer demands for growth and differentiation (Khanchel et al., 2023). Moreover, digitalization is increasingly being seen as a non-negotiable intermediary that mediates CSR and innovation's impact on company performance through improving operational effectiveness, stakeholder communication, and innovation ability (Thirumalesh Madanaguli et al., 2023). As a collective, these findings provide a holistic picture of how sustainable investment and marketing strategy interact with organizational competence and stakeholder perceptions to propel businesses to success.

Despite the increased amount of literature on sustainability and company performance, there exist numerous significant gaps that are yet to be overcome. For starters, most of the current literature has scrutinized sustainable marketing and sustainable investment behaviors separately from one another, without considering the synergic impact of these dimensions on company performance (Alkaraan et al., 2023). This partitioned strategy limits understanding of how these strategies synergistically affect organizational performance or which strategy prevails in specific situations. Second, although perceived corporate social responsibility is identified as a crucial mediator, there are few empirical tests examining its mediating function within the connection between sustainable marketing and investment strategies and firm performance at the same time (Bai et al., 2024). This absence raises questions regarding the psychological and reputational processes by which sustainability initiatives affect company success.

In addition, sustainability-based innovation has been researched primarily as a result of corporate sustainability practice but not as a mediating process transacting such strategies into profitability (Liu et al., 2023). The dynamic nature of innovation as a connector between sustainability practice and firm performance, particularly marketing as well as investment strategy, needs more empirical examination (Majid et al., 2023). Second, in addition to the boom in interest in digital transformation's contribution to the modern firm, studies that test its moderating effect on the mechanisms linking CSR and innovation to firm performance are still limited (Miranda et al., 2023). In particular, how far digital technologies may enhance or expedite the payoffs of sustainability-oriented initiatives has not been adequately investigated. Finally, most studies are based on cross-sectional data and cannot capture the dynamic character of sustainability strategies and their long-term impact on firm performance (Pizzurno & Cammarano, 2024). Closure of these gaps is critical to the creation of a comprehensive and balanced understanding of the intricate mechanisms by which sustainability strategies drive firm success.

Against the backdrop of the gaps in research identified, this study seeks to examine in depth how sustainable investment strategy and sustainable marketing strategy affect firm performance, with specific emphasis on the mediating roles of sustainability-driven innovation and perceived corporate social responsibility. The initial aim is to determine the direct effect of sustainable investment and marketing strategies on firm performance, hence bridging the gap on their joint effects. The second aim is to examine perceived CSR as a mediating construct that accounts for the translation of sustainability efforts into improved financial and reputational performance. It seeks to explain the psychological and stakeholder processes underlying value creation from sustainability. Third, the study aims to examine sustainability-driven innovation as an essential mechanism that companies leverage to convert sustainable investment and marketing strategies into competitive strengths and superior performance. Grasping innovation's mediating function will offer insights into how sustainability can lead to real product and

process improvement that is good for companies financially.

In addition, the research seeks to analyze digital transformation as a moderating factor in explaining the magnitude of the relationships between perceived CSR and firm performance and between sustainability-led innovation and firm performance. This aim fills the knowledge gap around the potential improvement or fast-tracking of sustainability-led benefits through digital technologies. By incorporating digital transformation into the model, the study will provide real-world insights into how to use technology in order to optimize sustainability yields.

This study holds significant value for both academia and practice by offering an integrated perspective on how sustainable marketing and investment strategies collectively influence firm performance through psychological and innovation mechanisms. By elucidating the mediating roles of perceived CSR and sustainability-driven innovation, it advances theoretical understanding of the processes that link sustainability to competitive advantage. Moreover, by investigating digital transformation's moderating effects, it highlights the importance of technology in enhancing sustainability outcomes. Practically, the findings will guide managers and policymakers on how to design and implement sustainability initiatives that effectively drive performance in a digitally evolving business landscape, fostering sustainable growth and stakeholder trust.

This study is theoretically based on Stakeholder Theory and the Resource-Based View (RBV) to account for the interlinks between sustainable marketing and investment strategies and firm performance. Stakeholder Theory explains that firms attain sustainable success through managing relationships with a broad array of stakeholders, responding to their environmental and social issues, which is at the core of perceived corporate social responsibility (Freeman & Phillips, 2002). RBV supports this by highlighting that sustainable marketing and investment skills represent valued resources and abilities that yield competitive benefit and better firm performances (Barney, 1991; Hart, 1995). Perceived CSR and sustainability-innovation mediation roles fit the dynamic capabilities school of thought, which considers innovation as the primary means through which firms cope and transform resources to sustain performance (Teece et al., 1997). Digital transformation is hypothesized to function as an external facilitator, moderating such relationships through provisioning technological infrastructure that supports communication, openness, and the speed of innovation. This research therefore synthesizes existing theories to explore how sustainability strategies, mediated through CSR and innovation and moderated by digital transformation, influence firm performance, as per the above-stated research objectives.

LITERATURE REVIEW

Sustainable Marketing Strategy and Firm Performance

Sustainable marketing strategy refers to a firm's deliberate effort to include environmental and social considerations in its marketing efforts, for example, green branding and marketing of environmentally friendly products (Arachchi & Samarasinghe, 2023). Green branding involves developing a brand image that captures environmental stewardship, while marketing of environmentally friendly products emphasizes the benefits of products that help mitigate ecological footprint (Alkaraan et al., 2024). Such strategies aim to align marketing messages with sustainability values in a bid to acquire and retain consumers who value ethical consumption (Ismail et al., 2023). Firm performance, in this scenario, is typically measured through profitability, sales growth, market share, and brand value financial indicators (Masongweni & Simo-Kengne, 2024).

Empirical studies have always validated the positive relationship between sustainable marketing and business performance. For instance, studies have found that businesses that employ green branding are able to differentiate themselves from competitors and enhance customers' loyalty, leading to increased sales and profitability (William et al., 2023). Environmental friendly promotion of the product has also been found to be linked to increased customer satisfaction and readiness to pay premium prices (Ye & Dela, 2023). Sustainable marketing also causes stakeholder relationships and corporate reputation to be more resilient, which are essential tangible assets for long term performance.

H_1: Sustainable marketing strategy has a positive impact on firm performance.

Sustainable Investment Strategy and Firm Performance

Sustainable investment strategy encompasses the incorporation of environmental, social, and governance (ESG) factors in financial planning and asset allocation decisions (Halid et al., 2023). This approach ensures that a company's investments in capital promote sustainable practices and mitigate risks associated with environmental

destruction, social problems, or inadequate governance (Narula et al., 2024). In contrast, with ESG-compliant financial planning, projects as well as expenditure are assessed based on sustainability indicators. Green asset allocation, on the other hand focuses on investment in renewable energy, clean technologies, or any other environment-friendly sector, as suggested by (Pu, 2023). Company performance under this system includes financial returns with risk aversion and immunity from market or regulatory shock, according to (Rahman et al., 2023).

There is increasing empirical evidence that sustainable investment practices positively affect firm performance. What has been established through research is that firms that are serious about practicing ESG tend to experience lower operational risks, greater innovation, and superior cost management. Access to sustainability investors can also reduce the costs of capital and enhance market capitalization (Zhu et al., 2023). Green asset allocation in research also indicates that it promotes long-term growth through stimulating investments in nascent green technology and green industries (Ismail et al., 2023). Accordingly, the literature is in alignment with the perspective that including sustainability in investment choices not only conforms to worldwide goals of sustainability but also increases financial performance, which justifies the hypothesis of a positive effect on firm performance.

H$_2$: Sustainable investment strategy has a positive impact on firm performance.

Perceived Corporate Social Responsibility as Mediator

Perceived Corporate Social Responsibility (CSR) is the stakeholders' perception of a company's allegiance to environmental and social duties in addition to profit generation (Vuong & Bui, 2023). It describes how customers, employees, investors, and society at large perceive a company to be acting ethically and contributing to public welfare (Chtioui et al., 2023). Within sustainable marketing strategy encompassing green branding and environmental product promotion, perceived CSR functions as an essential prism through which the marketing efforts are to be understood and assessed (Huang et al., 2024). Financial as well as non-financial performance of firms is measured and includes market reputation, customer loyalty, and profitability (Mahmud et al., 2023).

Mass empirical research indicates that perceived CSR acts as a mediating variable in the process of connecting sustainable marketing activities and enhancing the performance of the firm. Empirical evidence shows that when companies are perceived by consumers as socially responsible, they increase trust and emotional connection towards the brand, which produces more efficient sustainable marketing (Raza et al., 2023). Further, perceived CSR creates word-of-mouth and customer advocacy, which feed back into market positioning and financial performance (Oduro et al., 2024). The implications of these findings are that environmental marketing strategies improve performance at the firm level significantly by building perceived CSR among stakeholders, thereby proving the mediating hypothesis.

H$_3$: Perceived corporate social responsibility mediates the relationship between sustainable marketing strategy and firm performance.

Perceived CSR also acts as a mediator between firm performance and sustainable investment strategy (Safeer & Liu, 2023). Sustainable investment strategy includes ESG-compliant financial planning and green asset allocation, which indicates a company's commitment to ethical and sustainable business practices in its capital management decisions (Halid et al., 2023). Perceptions of stakeholders regarding CSR result from observable and credible investments in sustainable projects and governance practices, demonstrating a firm's true commitment to social and environmental issues (Behnam et al., 2023).

Empirical findings validate the mediating role of perceived CSR in this context. Evidence shows that companies with strong sustainable investment practices tend to be viewed as more socially responsible, which significantly contributes to investor confidence, customer loyalty, and employee engagement (Silva et al., 2023). These positive perceptions of CSR generate intangible value that enhances firm reputation and decreases operational risks, further enhancing financial performance (Aftab et al., 2024). Therefore, perceived CSR serves as a psychological and reputational intermediary, mediating the influence of sustainable investment approaches to firm success, consistent with hypothesized mediation.

H$_4$: Perceived corporate social responsibility mediates the relationship between sustainable investment strategy and firm performance

Sustainability-Driven Innovation as Mediator

Sustainability innovation is the creation and adoption of new products, processes, or business models that solve environmental and social issues while generating economic value (Su et al., 2025). In sustainable marketing strategy, innovations could be in the form of green packaging, sustainable supply chain management, or new forms of communicating environmental value (Khanchel et al., 2023). Such innovations improve the competitiveness of the firm by fulfilling the needs of sustainability-oriented consumers and distinguishing the firm from competitors (Liu et al., 2023).

Existing research presents empirical evidence that sustainability-led innovation is one of the main channels by which sustainable marketing strategies contribute to enhanced firm performance (Wang et al., 2023). Companies that innovate in order to merge sustainability with their marketing activities are found to improve operational efficiencies, appeal to specialty markets, and develop better brand equity (Palladino et al., 2023). Sustainability-led innovation not only meets customer needs but also commonly results in reduced costs and new sources of income (Rastegar et al., 2024). Thus, sustainability-driven innovation acts as an intermediary by converting intentions of sustainable marketing into concrete, performance-improving results.

$\mathbf{H}_5$: Sustainability-driven innovation mediates the relationship between sustainable marketing strategy and firm performance

Sustainability-fueled innovation is also an essential intermediary bridging sustainable investment strategy and firm performance (Majid et al., 2023). Sustainable investment strategy prioritizes the investment of resources in projects and assets that align with ESG standards, driving innovations in clean technology, resource efficiency, and circular economy initiatives (Sharma et al., 2023). These investments tend to generate innovative solutions that enhance environmental performance and create new market opportunities (Miranda et al., 2023).

Empirical evidence identifies that companies practicing sustainable investment-driven innovation are likely to realize better financial performance. Externally, the research depicts the companies reaping improved operational efficiency, minimized environmental risk, and higher resilience to regulatory changes (Khanchel et al., 2023). Sustainability-driven innovation works as an accelerative agent transforming capital investment in sustainability into game-changing products and processes, which contribute to the firm's competitiveness and profitability (Pizzurno & Cammarano, 2024). This mediation function emphasizes the strategic value of innovation in capturing the entire potential of sustainable investment strategies on firm performance.

$\mathbf{H}_6$: Sustainability-driven innovation mediates the relationship between sustainable investment strategy and firm performance.

Digital Transformation as Moderator

Digital transformation constitutes the infusion of digital technologies in all facets of a business, fundamentally changing it and how it generates value for customers (Cheng et al., 2024). It incorporates the adoption of big data analytics, artificial intelligence, cloud computing, and digital platforms that enhance business processes and interaction with stakeholders (Chwiłkowska-Kubala et al., 2023). Perceived CSR, as previously indicated, refers to stakeholders' perception of a firm's ethical duty to environmental and social responsibility. Company performance involves both financial outcomes and intangibles such as reputation and customer loyalty (Omol, 2024).

Evidence from research shows that digitalization can contribute to extending the impact of perceived CSR on firm performance by promoting communication, transparency, and stakeholder engagement (Paul et al., 2024). For example, firms applying digital technologies are in a stronger position to allocate CSR activities, track sustainability metrics, and respond to stakeholder interests in real-time, thereby raising the credibility and prominence of their CSR activities (Ye & Dela, 2023). Empirical research also proves that digitally enabled CSR communication drives greater consumer trust and brand loyalty, which translates to enhanced market performance (Vuong & Bui, 2023). The results of such research indicate that digitalisation intensifies the desirable effects of perceived CSR, justifying its position as a moderator that strengthens the perception-firm outcome relationship.

$\mathbf{H}_7$: Digital transformation positively moderates the relationship between perceived corporate social responsibility and firm performance.

Digital transformation plays a central role in accelerating sustainability-driven innovation, or the creation of new products, processes, or business models that address social and environmental concerns while generating economic value (Hendrawan et al., 2024). Digital technologies enable firms to innovate more rapidly and efficiently

through the facilitation of data-driven decision-making, collaboration, and agile development processes (Sui et al., 2024). Sustainability-innovation affects the performance of a company through enhanced competitive performance, operational efficiency, and customer satisfaction (Zhang & Chen, 2024).

There is evidence that digitalization enhances the support of sustainability-driven innovation to business performance via scaling and innovative practices that are agile (Zhang et al., 2023). Companies that implement state-of-the-art digital competencies can incorporate factors of sustainability into their innovation processes more effectively, resulting in quicker commercialization of green technologies and services (Zhuo & Chen, 2023). Digital technologies also increase the capacity of companies to track and expand on the sustainability effects of their innovations, thus raising stakeholder trust and market adoption (Chwiłkowska-Kubala et al., 2023). Thus, digitalization is a positive moderator, increasing the linkage between sustainability-focused innovation and enhanced firm performance.

$\mathbf{H}_8$: Digital transformation positively moderates the relationship between sustainability-driven innovation and firm performance.

Theoretical Framework Supporting the Research

This study draws primarily on Stakeholder Theory and Resource-Based View (RBV) to explain how sustainable marketing strategy is related to sustainable investment strategy, corporate social responsibility (CSR) as perceived by stakeholders, sustainability-driven innovation, digitalization, and firm performance. Stakeholder Theory presumes that companies are required to generate value for many stakeholders rather than just shareholders by meeting their interests and expectations, particularly environmental and social responsibilities (Freeman & Phillips, 2002). Sustainable investment and marketing practices are business functions that harmonize business processes with stakeholders' values, promoting perceived CSR and fostering innovation that is compatible with sustainability needs. The Resource-Based View supports this by highlighting sustainable marketing and investment capacity as worthy, scarce, and replicable assets that result in competitive advantage and exceptional business performance (Barney, 1991; Hart, 1995). Sustainability-innovation is an enabling competence that enables businesses to develop new processes and products that address shifting stakeholder needs and regulatory issues while yielding financial profits (Teece et al., 1997). Perceived CSR is a mediating variable transforming sustainability efforts into greater reputation, trust, and loyalty, which are essential intangible assets determining outcomes in performance. Digital transformation is hypothesized to exert a positive moderation on these relationships by offering companies superior technological resources to enhance communication, openness, innovation pace, and stakeholder participation, thus maximizing the positive impact on firm performance. These theoretical frameworks collectively inform the conceptual framework put forward (see Figure 1), which outlines how sustainable strategies both directly and indirectly impact firm performance through perceived CSR and sustainability-led innovation, with digital transformation augmenting these influences.

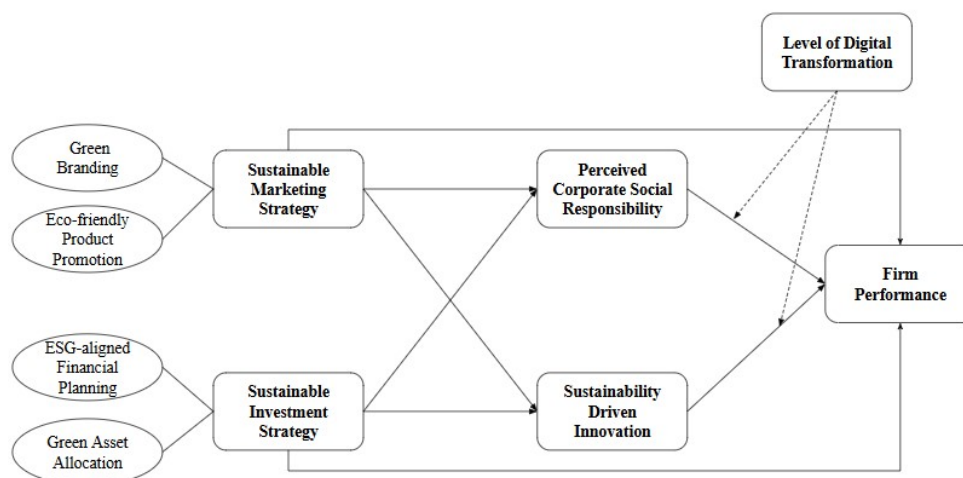

Figure 1: Conceptual Framework

METHODOLOGY

The present study employed a quantitative approach to analyze the influence of sustainable marketing and sustainable investment strategies on firm performance, and the mediating and moderating processes in between. The studied population was mid- and senior-level managers, including marketing managers, sustainability officers, financial planners, and investment managers who are employed by companies from different industries in Pakistan. These professionals were selected as a result of their firsthand experience and familiarity with implementing and overseeing sustainability initiatives, marketing efforts, and investments, thus being most qualified to provide accurate and relevant information regarding the constructs under study. Organized questionnaires were distributed to these managerial personnel, out of which 345 useful responses were obtained. This sample was deemed adequate for comprehensive analysis and was homogenous with respect to structural equation modeling (SEM) demands. The data were analyzed using SmartPLS, an efficient Partial Least Squares Structural Equation Modeling (PLS-SEM) software, because of its ability to properly test complex models with mediating and moderating factors and be versatile for small sample size and non-normality. Measurement scales for all the constructs like sustainable marketing strategy, corporate social responsibility perceived by the public, sustainable investment strategy, sustainability innovation, digital transformation, and firm performance were adopted from previously tested research scales to ensure high reliability and validity. The scales were slightly adjusted to the Pakistani setting to preserve clarity and meaning and not alter their original theoretical foundations. Prior to hypothesis testing, the reliability, convergent validity, and discriminant validity of the measurement model were tested. The use of SmartPLS enabled the thorough analysis of the direct, indirect, and moderating relationships assumed in the conceptual framework.

RESULTS

Table 1 and Figure 2 shows the construct validity and reliability statistics for all the variables applied in the model. Every latent construct shows high internal consistency as well as convergent validity according to outer loadings, Cronbach's Alpha, Composite Reliability (CR), and Average Variance Extracted (AVE). Every item loading is above the suggested threshold of 0.70, meaning that the items are good measures of their respective constructs. The Variance Inflation Factor (VIF) measures for all items are significantly below the threshold of 5, affirming that multicollinearity is not an issue. Digital Transformation has high reliability with a Cronbach's Alpha of 0.867, CR of 0.904, and AVE of 0.653. Firm Performance also indicates acceptable reliability (α= 0.779, CR = 0.851), although a few item loadings most notably FP4 (0.563) and FP5 (0.630) are comparatively lower but still acceptable for exploratory purposes. Perceived CSR indicates consistent reliability and convergent validity with a CR of 0.884 and AVE of 0.604. Sustainability-Driven Innovation and Sustainable Investment Strategy indicate particularly high indicators with CR values of 0.924 and 0.933, and AVEs above 0.70. Sustainable Marketing Strategy also shows great reliability (α= 0.915, CR = 0.937, AVE = 0.747), which proves that the construct is

reliable. The findings confirm the measurement model and justify further analysis.

Table 1: . Construct Reliability and Validity

Variable	Items	outer Loading	VIF	Cronbach's Alpha	CR	AVE
Digital Transformation	DT1	0.863	2.538	0.867	0.904	0.653
	DT2	0.815	2.003			
	DT3	0.809	2.112			
	DT4	0.768	1.802			
	DT5	0.781	1.737			
Firm Performance	FP1	0.857	2.752	0.779	0.851	0.538
	FP2	0.752	1.719			
	FP3	0.822	2.617			
	FP4	0.563	1.544			
	FP5	0.63	1.585			
Perceived CSR	PCSR1	0.828	2.193	0.838	0.884	0.604
	PCSR2	0.751	1.972			
	PCSR3	0.761	1.829			
	PCSR4	0.8	1.766			
	PCSR5	0.743	1.512			
Sustainability-Driven Innovation	SDI1	0.796	2.319	0.897	0.924	0.709
	SDI2	0.832	2.177			
	SDI3	0.866	2.996			
	SDI4	0.845	2.578			
	SDI5	0.868	2.821			
Sustainable Investment Strategy	SIS1	0.831	2.537	0.91	0.933	0.735
	SIS2	0.858	2.842			
	SIS3	0.861	2.817			
	SIS4	0.855	2.761			
	SIS5	0.881	3.442			
Sustainable Marketing Strategy	SMS1	0.879	2.855	0.915	0.937	0.747
	SMS2	0.837	2.252			
	SMS3	0.898	3.416			
	SMS4	0.821	2.205			
	SMS5	0.885	2.895			

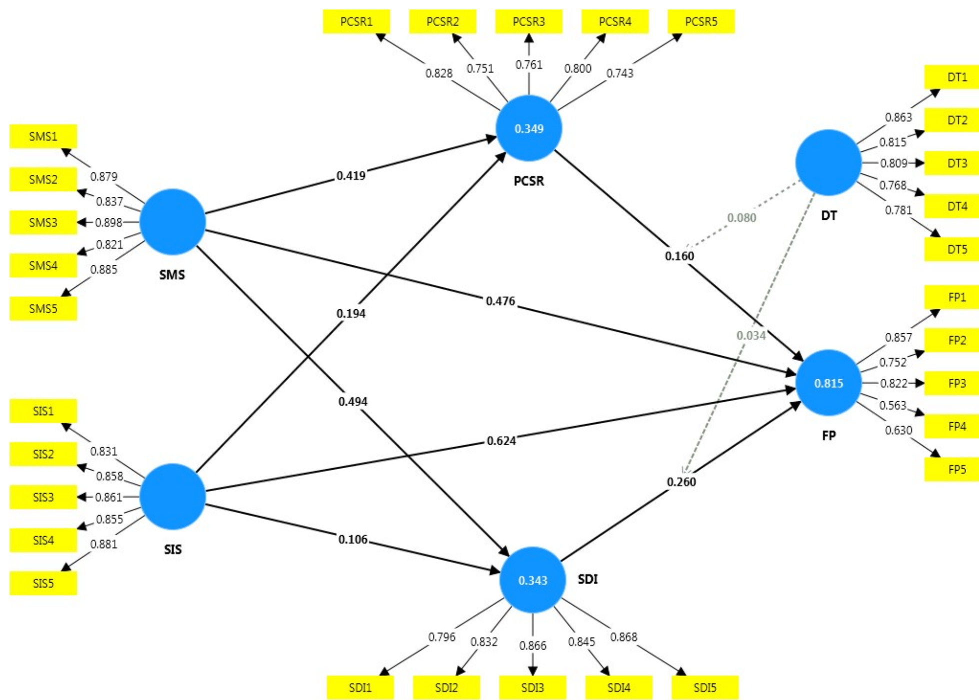

Figure 2: Measurement Model

Table 2 offers proof of discriminant validity based on both the Heterotrait-Monotrait ratio (HTMT) and the Fornell-Larcker criterion. The HTMT values are all less than the generally accepted limit of 0.90, meaning that each variable is empirically different from the others. Of interest, however, are the HTMT values between Firm Performance and Sustainable Marketing Strategy (0.848), as well as between Firm Performance and Digital Transformation (0.850), which are close to the higher limit but still within acceptable bounds and represent close but different constructs.

The Fornell-Larcker matrix also validates discriminant validity. For every construct, the square root of the AVE on the diagonal is larger than its correlations with every other construct, meeting the Fornell-Larcker criterion. For instance, the square root of the AVE of Sustainable Marketing Strategy is 0.865, which exceeds its correlation with any other construct in the model. In the same way, Firm Performance's diagonal value at 0.734 is higher than its correlations with other constructs like Sustainable Investment Strategy (0.643) and Perceived CSR (0.668). These findings thus validate the non-overlapping concept and statistical concepts of the constructs.

Table 2: . Discriminant Validity

	HTMT					
	DT	FP	PCSR	SDI	SIS	SMS
Digital Transformation						
Firm Performance	0.85					
Perceived CSR	0.536	0.833				
Sustainability-Driven Innovation	0.765	0.548	0.777			
Sustainable Investment Strategy	0.649	0.727	0.606	0.566		
Sustainable Marketing Strategy	0.647	0.848	0.645	0.632	0.615	
	Fornell-Lacker					
	DT	FP	PCSR	SDI	SIS	SMS
Digital Transformation						
Firm Performance	0.85					
Perceived CSR	0.536	0.833				
Sustainability-Driven Innovation	0.765	0.548	0.777			
Sustainable Investment Strategy	0.649	0.727	0.606	0.566		
Sustainable Marketing Strategy	0.647	0.848	0.645	0.632	0.615	

Table 3 shows R-square, adjusted R-square, Q^2 statistics (predictive fit), and SRMR (Standardized Root Mean Square Residual) as measures of model fit. Firm Performance has an R-square value of 0.815, which shows that 81.5% of firm performance variance is accounted for by the independent and mediating variables a highly strong effect size. The adjusted R-square of 0.812 further supports this strength. For Perceived CSR and Sustainability-Driven Innovation mediators, R-square statistics are 0.349 and 0.343, respectively, indicating moderate explanatory power by their respective predictors.

The Qš scores for all endogenous variables are above 0.30 (for example, 0.707 for Firm Performance), validating high predictive validity through blindfolding procedure. Finally, the SRMR is 0.080, which is less than the suggested cut-off of 0.10, a sign that the model is a good fit with the data and there is little difference between the estimated and observed correlations. All these findings jointly show that the structural model enjoys high explanatory power as well as a good overall fit.

Table 3: . R-square and Model Fit

	R-square	R-square adjusted	Q^2	SRMR
Firm Performance	0.815	0.812	0.707	0.08
Perceived CSR	0.349	0.345	0.332	
Sustainability-Driven Innovation	0.343	0.339	0.328	

Table 4 and Figure 3 reports the direct path analysis results, depicting the direct relationships between the two key independent variables, Sustainable Marketing Strategy (SMS) and Sustainable Investment Strategy (SIS) and the dependent variable, Firm Performance (FP). The results indicate both relationships are statistically significant. The path coefficient for the link between SMS and FP (H1) is 0.476 with a t-value of 4.602 and a p-value of 0.000, showing a robust and significant positive influence of green marketing activities on business performance. This establishes the contention that green branding and environmental product promotion lead to better business results. Analogously, the relationship between FP and SIS (H2) has an even larger effect, with a path coefficient of 0.624, a high t-value of 10.290, and a p-value of 0.000. This verifies that green financial planning and ESG-oriented investment strategies hugely enhance firm performance. These findings cumulatively substantiate the central hypothesis of the research that sustainability-oriented approaches in marketing and investment fields have a direct, positive, and significant effect on the overall performance of a company.

Direct Path Analysis

Table 4: . Direct Path Analysis

Hypotheses	Relation	Path coefficient	*t* Value	*P* value
H_1	SMS -> FP	0.476	4.602	0
H_2	SIS -> FP	0.624	10.29	0

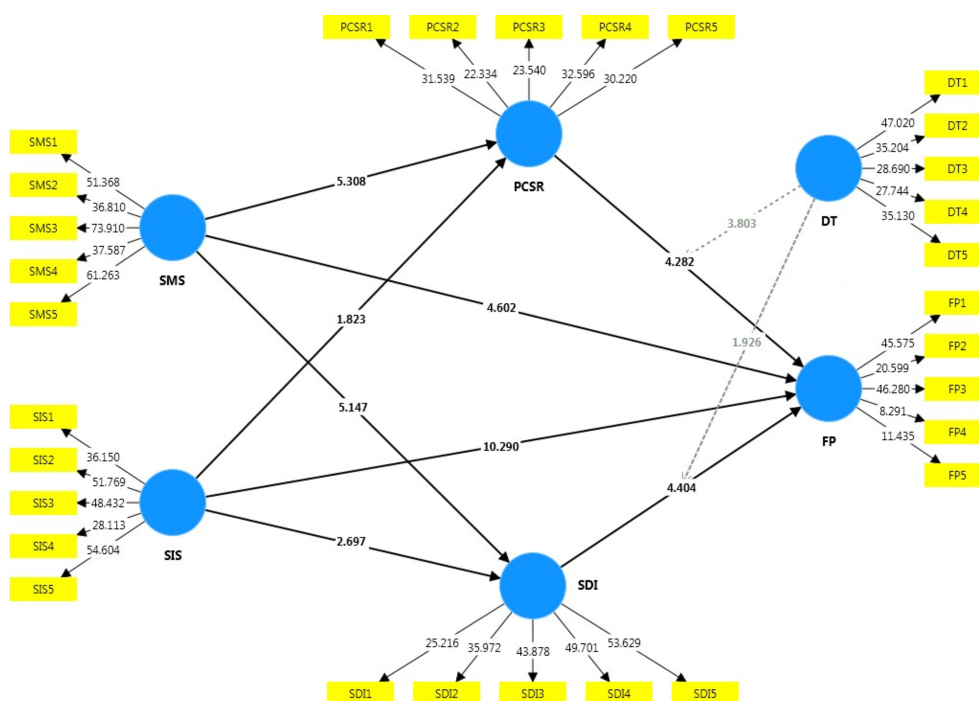

Figure 3: Structural Model

Table 5 presents the outcome of mediation analysis to test if Perceived Corporate Social Responsibility (PCSR) and Sustainability-Driven Innovation (SDI) mediate the effect of the two sustainability strategies on firm performance. All four hypotheses of mediation are supported. The indirect effect from SMS to FP through PCSR has a path coefficient of 0.067, a t-value of 3.702, and p-value of 0.000, signifying the effect of mediation. This indicates that when stakeholders view a company to be socially responsible, this reinforces the role of sustainable marketing in influencing performance. For H4, the mediation effect of PCSR between SIS and FP is also significant but weaker, with a coefficient of 0.031, a *t*-value of 1.991, and a *p*-value of 0.042.

In the same way, H5 is confirmed, in which SDI acts as a mediator between SMS and FP with a path coefficient of 0.128, a *t*-value of 3.211, and a p-value of 0.001. This indicates that innovation activities based on sustainability objectives improve the performance effect of marketing strategies. H_6 further verifies a statistically significant mediation of SDI between SIS and FP, with the coefficient being 0.028, the t-value standing at 1.914, and the *p*-value at 0.041. Together, these results verify the essential mediating roles of CSR perception and innovation in converging sustainability strategies into tangible firm performance results.

Table 5: . Mediation Analysis

Hypotheses	Relation	Path coefficient	*t* Value	*P* value
H_3	SMS →PCSR →FP	0.067	3.702	0
H_4	SIS →PCSR →FP	0.031	1.991	0.042
H_5	SMS →SDI →FP	0.128	3.211	0.001
H_6	SIS →SDI →FP	0.028	1.914	0.041

Table 6 presents the outcomes of the moderation analysis testing the role of Digital Transformation (DT) in

enhancing the associations between the mediators (PCSR and SDI) and Firm Performance. The outcomes reveal that both moderating effects are statistically significant. For H7, DT's interaction effect on the PCSR-FP relationship is positive and significant, with a path coefficient of 0.080, a t-value of 3.803, and a p-value of 0.000. This means that the positive effect of perceived CSR on firm performance is enhanced in those firms with more advanced levels of digital transformation. Digital platforms, analytics, and communication tools most likely increase the visibility and credibility of CSR initiatives and enhance stakeholder trust and firm performance.

For H8, the DT-SDI interaction with respect to FP is also interesting, albeit with a smaller effect size. The path coefficient is 0.034, the t-value is 1.926, and the p-value is 0.045. This outcome indicates that digital transformation also reinforces the connection between firm performance and sustainability-driven innovation, perhaps by speeding up innovation processes, better scalability, or better responsiveness to the market. Such results point out the facilitative role of digital capabilities in exploiting the strategic payoffs from sustainability initiatives in modern firms.

Table 6: . Moderation Analysis

Hypotheses	Relation	Path coefficient	*t* Value	*P* value
H_7	DT x PCSR -> FP	0.08	3.803	0
H_8	DT x SDI -> FP	0.034	1.926	0.045

DISCUSSION

These results of this study reveal fascinating insights into the different channels by which sustainability strategy translates into enhanced firm performance in today's business world. With global markets and stakeholders increasingly prioritizing environmental responsibility and social responsibility, firms are compelled to adopt sustainability as more than an ancillary concern but as a core strategic imperative. The hypotheses that are collectively tested set out to establish that sustainable marketing and investment strategies are the core pillars upon which business prosperity is driven directly and indirectly by sophisticated mechanisms like innovation processes and stakeholders' perception. Moreover, the moderating role of digitalization sets out the way technology development forms the core role as drivers that boost value generated through sustainability interventions. In combination, these results are an indication of a changing business environment where sustainability, innovation, stakeholder focus, and digitalization converge to redefine competitive and sustainable success.

Empirical evidence confirms that green marketing strategy, in the form of green branding and eco-friendly product promotion, directly impacts firm performance. Consistent with earlier research, the implication is that such firms can differentiate themselves effectively in increasingly expansive competitive and environmentally conscious markets (William et al., 2023). The positive correlation identified demonstrates how sustainability not only responds to rising consumer demand for sustainable offerings but also fuels brand loyalty, customer trust, and willingness to pay a premium price, all of which result in better financial returns. Theoretically, this is in support of the resource-based view (RBV) that asserts sustainable marketing capacities are valuable, rare, and imitable resources that bring competitive benefits (Barney, 1991). In practice, what these results suggest is that companies should spend capital on building genuine green marketing practices instead of viewing sustainability as a cosmetic or symbolic endeavor. Companies that truly integrate environmental values into their marketing communications and product strategies are likely to reap concrete rewards in market share, reputation, and profitability. This evidence also aligns with stakeholder theory (Freeman & Phillips, 2002), since companies that respond to stakeholder environmental issues through marketing enhance their relational capital, which ultimately translates to better firm performance.

The support of the second hypothesis validates that sustainable investment strategy through ESG-matched financial planning and green asset allocation has a positive impact on firm performance. This result emphasizes the strategic value of integrating sustainability in capital allocation decisions, consistent with previous studies demonstrating that firms with high-quality ESG practices have improved risk management, reduced cost of capital, and higher returns on assets (Miranda et al., 2023). These results imply that sustainable investment not only meets ethical and regulatory requirements but also creates economic value by enhancing efficiency of operations and creating new business opportunities. This result supplements the RBV by showing that sustainable investment choices are a key firm resource for increasing financial stability and innovation capacity (Hart, 1995). Additionally,

the positive relationship between sustainable investment and company performance underlines the increasing focus on environmental, social, and governance issues as the primary drivers of long-term business success (Pu, 2023). For managers, the research highlights the need to integrate ESG thinking into financial decision-making rather than treating them as add-ons or risks to be managed. By investing strategically in sustainability-focused projects, companies can build their reputation, stakeholder trust, and ultimately improve their market competitive positioning.

The third hypothesis, that CSR perceived mediates firm performance and sustainable marketing strategy, was also found to hold true and highlights the central role played by stakeholder perceptions in translating the efforts of sustainability into performance. The mediation highlights the point that it is not the existence of sustainable marketing programs but rather how the same are perceived by the customers, investors, and other stakeholders that result in the success of a company. Empirical confirmation of the mediation also agrees with previous studies that have shown that perception of CSR enhances corporate reputation and trust, which are abstract assets needed for competitive dominance (Oduro et al., 2024). Theoretically, it confirms stakeholder theory by highlighting that stakeholder support and engagement are needed to translate sustainability plans into actual outcomes (Freeman & Phillips, 2002). It also depicts the psychological process by which sustainability initiatives get valorized, which strengthens customer loyalty and brand advocacy and hence enhance financial performance. Practically, this result suggests that as much as sustainability initiatives matter, the reporting and communication of those initiatives are also crucial. Companies should prioritize the development of genuine CSR perceptions by involving stakeholders through truthful communication, societal engagement, and responsible conduct to maximize the performance advantage of sustainable marketing approaches.

The confirmation of the fourth hypothesis indicates that perceived CSR also acts as a mediator between sustainable investment strategy and firm performance, strengthening evidence that stakeholder perception is a critical link in the chain of sustainability-performance. This finding implies that the effect of sustainable investment on firm performance is partially dependent on stakeholders acknowledging and appreciating such investments as socially responsible deeds. Earlier research justifies this result, and it has been shown that companies viewed as socially responsible have more investor trust, customer loyalty, and employee dedication, and altogether improve company performance (Raza et al., 2023). The mediation effect also shows that sustainable investments, although very important, have to be made visible and credible to stakeholders in order to best reap their benefits. Theoretically, this result combines the RBV and stakeholder theory by showing how sustainable investment choices are resources enhancing firm competencies and how CSR perception captures the relational capital thereby created within the stakeholder network. Managerially, this highlights the role of open ESG reporting and stakeholder dialogue practices that signal the firm's sustainability-oriented investment stance (Narula et al., 2024). In doing so, companies can build stakeholder trust, reduce reputational risk, and improve their bottom lines through enhanced capital access and customer markets. Across all measures, the mediated relationship supports that investments in sustainability have heightened impacts when stakeholders view them as being part of the firm's overall CSR agenda.

The fourth hypothesis acceptance verifies that sustainability innovation is a key mediator that exists in the relationship between sustainable marketing strategy and firm performance. This discovery emphasizes that the positive effect of green brand and environmental product promotion on firm performance is greatly articulated through a firm's ability to innovate sustainably. Companies adopting sustainable marketing are not only improving their market reputation but also stimulating product, service, and process innovation that is more aligned with environmental and social standards. This is consistent with the dynamic capabilities view that regards innovation as a critical mechanism for allowing companies to respond to changing market needs and regulatory pressures while gaining competitive advantage (Teece et al., 1997). Empirical evidence substantiates this connection by demonstrating that sustainability-focused innovation is responsible for operational efficiency, cost reduction, and differentiation in oversaturated markets (Palladino et al., 2023). In practice, the implication of this evidence is that companies should embed sustainability at the core of their innovation plans, seeing eco-innovation as more than just compliance but as a performance and growth driver. The facilitating role of innovation highlights the strategic importance of aligning marketing activities with R&D initiatives to promote sustainable development of solutions, thus converting green marketing into economic benefits.

Hypothesis six that sustainable innovation mediates sustainable investment strategy and firm performance was also confirmed, emphasizing the change-impacting role of innovation in the transformation of sustainable investments into better performance. Sustainable investment choices like ESG-compliant financial planning and

green asset allocation are the financial and structural basis required to create innovation to tackle sustainability issues. The mediation effect, on the other hand, suggests that it is not investment itself but innovation facilitated by such investments that is behind firm performance. Such a discovery is in line with literature that has underscored that it is financial resources poured into sustainability that bring about opportunities to create new technologies, streamline processes, and venture into new markets with green-efficient solutions (Rahman et al., 2023). The dynamic capability theory also elucidates the same by demonstrating how the investments are used by firms as resources in creating long-term competitive advantage-sustaining innovation capabilities (Barney, 1991; Teece et al., 1997). For practitioners, this information stresses the importance of allocating resources strategically towards innovation activities towards meeting sustainability objectives, and not adopting a simple investment strategy. This also suggests that firms should establish mechanisms to track the innovation outcomes of sustainable investments, thereby enhancing transparency and stakeholder confidence while maximizing the financial returns associated with green investments.

The beneficial moderation role of digital transformation in the interaction between perceived corporate social responsibility and firm performance, as supported by hypothesis seven, demonstrates the enhancing function of digital technologies in empowering the value gained from CSR perceptions. Digitalization involves the use of sophisticated technologies like big data analysis, AI, and digital platforms to facilitate companies to make it easier to communicate CSR activities and interact with stakeholders in real-time (Aftab et al., 2024). Such improved communication and transparency enhance stakeholder confidence and make the reputational capital from CSR even greater, ultimately with a positive impact on firm performance. Additionally, digital technology allows the collection and distribution of sustainability information to make CSR initiatives more measurable, credible, and accessible to various stakeholder groups (Mahmud et al., 2023). Theoretically, the result corroborates embedding digital capacities into the RBV model, where digital transformation is a supporting asset that enhances the impact of intangible assets such as CSR perception (Barney, 1991). In practice, this highlights that companies need to invest not only in sustainability efforts but also in digital infrastructure that aids and amplifies CSR reporting and communication. These types of investments can assist companies in differentiating themselves even more in the digital age, where stakeholder oversight and demands for openness are rising fast.

The last hypothesis, stating that digital transformation positively moderates the association between sustainable innovation and firm performance, was also confirmed, showing how digital technologies spur and amplify the effect of sustainable innovation towards firm success. Digital transformation allows companies to leverage data analytics, cloud computing, and collaboration platforms that facilitate innovation processes, minimize time-to-market, and enhance the scalability of sustainability-led solutions (Plekhanov et al., 2023). This technology advancement enhances innovation activities' efficiency and effectiveness, enabling companies to enhance stakeholder expectations and regulatory compliance, thus driving performance results. The results are in line with recent innovation literature that highlights the significance of digitalization in driving open innovation environments and knowledge sharing essential for sustainability innovation (Paul et al., 2024). Also, digital technologies assist companies in tracking and managing the environmental and social consequences of innovation, strengthening stakeholder trust and market adoption. For managers, this means that digital transformation investments are not only operationally mandatory but strategic drivers that realize the full value of sustainability-focused innovation. The effect of moderation emphasizes the importance of integrating digital and sustainability strategy seamlessly in the quest for greater competitive advantage and company performance.

Overall, the confirmation of all hypotheses highlights the extremely interdependent nature of relationships between digital transformation, performance of the firm, innovation capacities, firm corporate social responsibility perceptions, and sustainability strategies. Beyond the confirmation of well-established theoretical models like Stakeholder Theory and the Resource-Based View, this research builds these further by integrating modern-day digital dynamics as well as mediating mechanisms. In practice, these conclusions provide a solid template for managers to categorize and execute sustainability programs for strategic bases and technological support, securing lasting competitive edge.Finally, this integrated model reinforces the fact that sustainability is now not an independent agenda but a merged, innovation-driven, and digitally enlivened strategy for business success in the modern world.

CONCLUSION

Finally, in summary, this research provides an inclusive analysis of how the use of sustainable marketing and investment strategies enhances firm performance by complex mechanisms of perceived corporate social responsibility and sustainability-inspired innovation, further intensified by digitalization. The empirical evidence attests that incorporating sustainability into fundamental marketing and finance choices is not only morally necessary but also strategic, promoting enhanced financial performance as well as competitive advantage. The mediating role of CSR perception and innovation highlights the significance of stakeholder engagement and ongoing innovation in sustainable solutions as chief drivers of value creation. Additionally, the moderating role of digital transformation highlights the significance of technology in enabling scaling up of sustainability initiatives so that companies are able to engage freely, innovate effectively, and respond promptly to changing market needs. With the incorporation of sustainability, innovation, stakeholder theory, and digital competencies in one framework, the study advances theory and practice and offers managers practical recommendations that pursue sustainable development in a continually evolving global business world. This research finally confirms that corporate success in the future is built on the balanced coexistence of sustainability and digitalization, enabling companies to achieve stakeholder expectations while ensuring long-term performance and resilience.

IMPLICATIONS

This study provides useful advice to practitioners who seek to leverage sustainability as a strategic source of firm performance. It first emphasizes the key role played in this process by integrating sustainability far back into marketing and investment strategy and not treating these as independent or compliance actions. The managers are urged to create genuine sustainable marketing campaigns that appeal to the consumers through green branding and environmental product promotion, eliciting trust and loyalty that have direct positive impacts on firm results. Similarly, the research calls for incorporating ESG considerations into asset allocation and financial planning so that investments directly contribute to sustainable innovation and operational effectiveness. In addition, the mediating functions of perceived corporate social responsibility and sustainability-driven innovation indicate that companies need not only to implement sustainability projects but to communicate these activities purposefully to stakeholders and invest in ongoing innovation that is aligned with sustainability objectives. Notably, the moderating effect of digital transformation confirms that the use of digital technologies like big data analytics, AI, and digital platforms can considerably enhance the effectiveness of sustainability strategies by improving transparency, stakeholder participation, and innovation processes. This implies to practitioners that digital and sustainability strategies should be integrated in close alignment for the optimum performance gain. In general, the results offer a general guide for companies to gain competitive edge through integrated, innovative, and digitally supported sustainability practices.

Theoretically, this study contributes to the knowledge of sustainability's impact on firm performance by synthesizing various conceptual viewpoints into an integrated framework. By empirically confirming the direct and indirect relationships between sustainable marketing and investment initiatives with firm performance, the research enriches the Resource-Based View (RBV) by delineating sustainability-focused capabilities like green marketing and ESG-aligned investments as desirable, scarce, and imitable assets influencing competitive success. The intercession of perceived corporate social responsibility further supports Stakeholder Theory, demonstrating how stakeholder perceptions serve as focal mechanisms that convert sustainability activities into actual performance improvement. The further identification of sustainability-led innovation as a central mediator also places emphasis on dynamic capabilities to respond to environmental pressures and changing market demands, enriching the RBV with innovation-focused avenues. The moderating influence of digital transformation adds a new theoretical dimension, proposing that digital capability functions as complementary assets augmenting the effectiveness and value of sustainability efforts. This incorporation of digital transformation into the traditional theories of sustainability is a significant conceptual leap as it addresses the emerging union between technology and sustainability in modern strategic management. Cumulatively, the studies offer a multifaceted and multidimensional theoretical framework that reflects the intricacy of how digital-era sustainability strategies make impacts on firm performance.

LIMITATIONS AND FUTURE DIRECTIONS

Even with the exhaustive information offered by this research, some limitations call for consideration and leave room for future studies. To begin with, the research design may be limited by its use of cross-sectional data that hinders the assessment of causality and the observation of dynamic changes in sustainability approaches, innovation, and performance over time. Longitudinal studies are hence suggested to improve upon temporal change and causal process capture. Second, the generalizability of this study may be limited by the geographical or industry setting in which the data were gathered; future work may enlarge the scope by investigating varied industries and regions in order to determine how context will affect the relationships between sustainable marketing, investment strategies, and firm performance. In addition, as much as the study includes important mediators like perceived corporate social responsibility and innovation for sustainability, other mediating or moderating variables like organizational culture, leadership commitment, or regulatory forces are not investigated and could add depth to the explanatory richness of the model. The contribution of digital transformation, while included as a moderator, also has multifaceted aspects worth further inquiry, such as the effects of certain technologies or levels of digital maturity. Subsequent research could further investigate how future trends such as circular economy practices, social entrepreneurship, or blockchain-based sustainability reporting interact with the variables that were identified. Finally, measuring constructs such as perceived CSR and innovation can be aided by multi-method procedures using a mix of qualitative information and objective performance data to increase validity. Alleviating these constraints by utilizing varied methodologies and more extensive conceptual frameworks will not only make theories more rigorous but also yield more practicable findings for practitioners working within the changing sustainability context.

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