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STRATEGIES OF SAUDI COMPANIES FOR ENVIRONMENTAL SUSTAINABILITY UNDER THE SAUDI GREEN INITIATIVE: A PERCEPTION ANALYSIS ON COMMITMENT AND MARKETING

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ABSTRACT

This study investigates the strategies of Saudi companies to promote environmental sustainability within the framework of the Saudi Green Initiative by identifying key cultural, economic, regulatory, and technological factors. A quantitative research design utilizing Structural Equation Modelling (SEM) was employed. 300 data were collected through structured surveys administered to Saudi companies across multiple sectors. The survey assessed sustainability strategies based on cultural, economic, regulatory, and technological factors. SEM was used to examine complex relationships and to test both direct and indirect effects. Data analysis encompassed model specification, validation, and hypothesis testing to ensure robust and reliable results. Findings indicate that four primary factors significantly enhance environmental sustainability. Regulatory frameworks and internal capabilities further enable the effectiveness of these strategies. The model demonstrates that companies that integrate environmental considerations into their core strategies consistently achieve superior sustainability outcomes aligned with the Saudi Green Initiative's national goals. The study provides actionable guidance for policymakers and corporate managers. Policymakers are encouraged to implement targeted regulations and incentives to accelerate the adoption of sustainable practices. Companies should proactively enhance stakeholder engagement and foster innovation in green technologies. These findings support adopting best practices that facilitate the private sector's transition toward environmental sustainability. This research advances corporate sustainability strategies in Saudi Arabia by addressing gaps in the existing literature and applying SEM to reveal key relationships among strategic variables and sustainability outcomes. It addresses an empirical research gap in the Middle East and provides future researchers and practitioners with integrative frameworks tailored to emerging economies.

KEYWORDS: Saudi Companies, Environmental, sustainability, Saudi Green Initiative.

1. INTRODUCTION

In recent years, environmental sustainability has become an imperative for governments, corporations, and societies worldwide (Ogunkan, 2022). The escalating concerns over climate change, environmental degradation, and resource depletion have prompted a global shift towards sustainable development practices. Countries around the world are adopting comprehensive strategies to mitigate environmental impacts while fostering economic growth (Saqib et al., 2024). Among these, Saudi Arabia has emerged as a notable example with its ambitious and transformative Saudi Green Initiative (SGI), reflecting a commitment to environmental stewardship and sustainable development (Ghanem & Alamri et al., 2023).

The Saudi Green Initiative, launched in 2021, embodies the Kingdom's strategic vision to diversify its economy away from oil dependency and to address pressing environmental challenges (Nassar, 2025). The initiative aims to plant billions of trees, reduce carbon emissions, increase the adoption of renewable energy, and promote sustainable urban development. It underscores Saudi Arabia's recognition of environmental sustainability as a critical component of its national development agenda (Nematchoua et al., 2021). However, achieving these objectives largely depends on the active participation and strategic efforts of Saudi companies across sectors. Saudi companies play a vital role in implementing sustainability practices, adopting environmentally friendly technologies, and aligning their corporate strategies with national environmental goals. In this context, understanding the strategies these companies employ to promote environmental sustainability (Ghanem & Alamri et al., 2023). Such strategies may include adopting green technologies, integrating sustainability into corporate governance, engaging stakeholders, enhancing environmental reporting, and investing in renewable energy projects. Analysing these strategies provides insights into how businesses contribute to national environmental goals and can be optimised for greater impact (Al-Zubairi et al., 2025).

Despite the growing interest and efforts in corporate environmental sustainability, there is a need for a comprehensive understanding of the factors influencing the adoption and effectiveness of these strategies within the Saudi context (Lutfi et al., 2023). Cultural, economic, regulatory, and technological factors uniquely shape the sustainability landscape in Saudi Arabia. The Kingdom's Vision 2030 and the Saudi Green Initiative create an enabling environment; however, the actual implementation by companies varies based on internal capacities, leadership commitment, and stakeholder pressures (Agyabeng-Mensah et al., 2022). As the Saudi Kingdom intensifies its environmental initiatives, understanding corporate strategies becomes essential for ensuring that national goals are met efficiently and effectively. The insights derived encourage best practices and foster a culture of sustainability within the corporate sector.

Furthermore, integrating corporate strategies with national environmental initiatives is vital to achieving sustainable development in Saudi Arabia. The Saudi Green Initiative provides a strategic backdrop for companies to operate, innovate, and lead in environmental stewardship (Wasiq et al., 2023).

Therefore, the study seeks to assess stakeholders' and policymakers' perceptions of Saudi companies' strategic approaches to environmental sustainability, employing Structural Equation Modelling to unravel the complex relationships underlying a sustainable future for the Kingdom. This research has the potential to inform policymakers, corporate managers, and stakeholders about barriers to environmental sustainability in the Saudi corporate sector. Policymakers can leverage these insights to design more effective regulations and incentives that encourage sustainable practices. Corporate leaders can identify strategic areas for improvement and innovation, aligning their operations with national sustainability goals by leveraging commitments and marketing strategies to advance environmental sustainability in line with the Saudi Green Initiative.

2. THEORETICAL PERSPECTIVES

2.1. Commitment And Marketing

In contemporary organizational and consumer research, the distinction between commitment and marketing is both fundamental and nuanced (Jones et al., 2010). Marketing comprises strategies and activities designed to attract and retain customers, whereas commitment refers to the psychological and relational bonds that develop over time between consumers and brands or organizations (Ampornklinkaew, 2023). Theoretical exploration of these concepts necessitates examining diverse perspectives that clarify their respective roles and interactions (Ahmad & Akbar, 2023). Commitment is primarily analyzed through relationship and social exchange theories. In consumer behavior, commitment is a psychological state that indicates a long-term orientation toward a brand or organization. This state is characterized by a desire to

maintain a valued relationship despite competing alternatives. Abid et al. (2023) note that the Commitment-Trust Theory holds that trust and commitment are essential for establishing strong, enduring relationships. Trust mitigates perceived risk, thereby fostering commitment, which, in turn, enhances loyalty and future positive interactions. Rashidi-Sabet and Bolton (2024) similarly emphasize the roles of investments, satisfaction, and perceived alternatives in determining commitment levels.

Marketing is grounded in strategic and tactical frameworks intended to influence consumer perceptions and behaviors (Sivarajah, 2024). Classical marketing theories, including the 4 Ps (Product, Price, Place, Promotion), concentrate on developing value propositions that resonate with target audiences. Contemporary marketing strategies prioritize customer relationship management (CRM), branding, and personalized communication to cultivate positive perceptions and loyalty (Mogaji, 2025). Theoretically, marketing seeks to shape consumer attitudes and behaviors through targeted stimuli and messaging, frequently utilizing models such as the Elaboration Likelihood Model to analyze how consumers process marketing information (Shahab et al., 2021).

The intersection between commitment and marketing represents a significant area of scholarly interest. Although marketing initiatives are designed to attract customers, the development of commitment requires cultivating trust, emotional bonds, and perceived value that extend beyond transactional exchanges (Tan & Saraniemi, 2023). Relationship marketing theories highlight the importance of long-term engagement, loyalty programs, and emotional branding in strengthening commitment. The Service-Dominant Logic (Vargo & Lusch, 2004) emphasizes value co-creation, proposing that continuous interactions and shared experiences contribute to stronger commitments that support sustained marketing outcomes (Chatzi et al., 2024). Commitment and marketing are theoretically interconnected yet remain distinct constructs. Marketing strategies facilitate the initial development of relationships, whereas commitment signifies the depth of relational bonds established. Examining their interplay from multiple theoretical perspectives enhances both academic understanding and practical implementation, underscoring the need to integrate relationship-building with strategic marketing initiatives to achieve long-term success. Cultural, economic, regulatory, and technological factors

3. LITERATURE REVIEW

The SGI is a cornerstone of Saudi Arabia's Vision 2030, aiming to reduce carbon emissions, increase renewable energy use, and promote sustainable business practices (Hegazy, 2024). The initiative has led to the proliferation of green projects, the adoption of environmental management standards, and the integration of sustainability into corporate strategies (AlQuhtani, 2025). Recent research has examined the strategies Saudi companies employ to promote environmental sustainability in the context of the Saudi Green Initiative (SGI). These studies highlight an increasing awareness among businesses of their responsibility to address environmental challenges and to align corporate practices with national sustainability goals (Mansour et al., 2024). AlKhars et al. (2024) investigated corporate social responsibility (CSR) initiatives in Saudi Arabia, focusing on integrating environmental considerations into strategic planning. Their findings indicate that while many firms adopt green technologies and engage in environmental reporting, the extent and consistency of these practices differ considerably across sectors. Similarly, Selim and Alshareef (2025) documented the growing implementation of renewable energy projects by Saudi companies, motivated by regulatory incentives and economic advantages. Their research demonstrates that regulatory frameworks such as Vision 2030 and the SGI act as catalysts for environmental initiatives. Nevertheless, some companies remain reluctant to participate due to perceived high costs and uncertainties regarding regulatory enforcement, suggesting the necessity for enhanced policy support and awareness initiatives. Additional studies, including Bhatti et al. (2023) explored technological adoption in Saudi firms, underscoring the significance of green technologies and digital innovation in sustainability strategies. However, these studies often lack a comprehensive analysis of variations in technological readiness across organizations and their impact on strategic decision-making.

3.1. Cultural And Saudi Companies for Environmental Sustainability Under the Saudi Green Initiative

The Saudi Green Initiative (SGI), launched in 2021, represents a significant commitment by Saudi Arabia to environmental sustainability and climate change mitigation (AlQuhtani, 2025). The initiative seeks to plant billions of trees, reduce carbon emissions, and advance renewable energy, in alignment with Vision 2030 objectives for economic diversification and environmental preservation (Mohan et al., 2024). Both cultural organizations and

Saudi-based companies are integral to achieving these goals. Cultural organizations, including those in the arts, media, and education sectors, enhance environmental awareness and encourage behavioral change (Maziliauske, 2024). These organizations provide platforms to promote sustainability values, draw attention to environmental challenges, and cultivate a culture of conservation. For instance, media outlets and cultural festivals may organize campaigns and events to educate the public about the significance of tree planting, renewable energy, and waste reduction (Alonso-Vazquez & Ballico, 2021). Museums and cultural institutions can develop exhibits that highlight the nation's natural heritage and underscore the importance of environmental stewardship, thereby fostering a collective sense of responsibility rooted in Saudi cultural identity (Mancini, 2023).

Krane and Braun (2024) observe that a wide range of Saudi companies across multiple sectors are actively advancing the objectives of the SGI. In the energy sector, companies such as Saudi Aramco and SABIC are investing in renewable energy projects and sustainable operational practices. Saudi Aramco, for example, has announced plans to diversify its energy portfolio through investments in solar and wind energy, supporting the SGI's renewable energy targets. In the utilities and infrastructure sectors, organizations like the Saudi Water Partnership Company are engaged in water conservation and sustainable resource management initiatives (Almulhim and Abubakar, 2023). Saudi-based construction firms are also adopting green building standards to promote environmentally responsible urban development (Zumbraegel, 2022). The private sector includes telecommunications companies such as Saudi Telecom Company (STC), which are implementing energy-efficient data centers and advancing digital solutions to minimize carbon emissions (Madkhali & Sithole, 2023). The SGI has further stimulated the emergence of green startups in fields such as waste management, renewable energy, and sustainable products. Many of these startups collaborate with both local and international organizations to develop innovative sustainable solutions. Collaborations with international renewable energy firms facilitate technology and knowledge transfer, thereby accelerating Saudi Arabia's transition to a green economy (Zhou et al., 2025).

Within the framework of the Saudi Green Initiative, both cultural organizations and Saudi companies serve as essential drivers of environmental sustainability. Cultural organizations influence societal attitudes and cultivate a conservation-oriented culture, while local businesses implement practical measures to reduce carbon emissions and advance renewable energy adoption (Almulhim and Abubakar, 2023). The combined efforts of these entities are critical for fulfilling Saudi Arabia's environmental commitments and securing a sustainable future that aligns with the nation's cultural values and economic objectives.

H_1: Cultural and Saudi Companies have an influence on Environmental Sustainability under the Saudi Green Initiative

3.2. Economic Impact of Saudi Companies on Environmental Sustainability Under the Saudi Green Initiative

The Saudi Green Initiative (SGI), launched in 2021, exemplifies Saudi Arabia's commitment to environmental sustainability and climate change mitigation (Anwar et al., 2025). The engagement of the economic sector, especially Saudi-based companies from various industries, is integral to the initiative's success. These organizations play a critical role in advancing sustainability objectives, promoting innovation, and supporting Saudi Arabia's transition toward a greener economy (Alhowaish, 2025).

Saudi companies contribute significantly to environmental sustainability through investments in renewable energy, sustainable infrastructure, and environmentally responsible practices (Selim & Alshareef, 2025). Within the SGI framework, the government encourages private sector involvement in renewable energy projects, such as solar and wind power. Leading corporations, including Saudi Aramco, have developed strategies to diversify energy portfolios, invest in clean energy, reduce reliance on fossil fuels, and lower carbon emissions (Krane & Braun, 2024). Similarly, SABIC, a major petrochemical company, is implementing sustainable manufacturing processes and creating environmentally friendly products (Abuazzah, 2022). Small and medium enterprises (SMEs) are also emerging as important contributors, particularly in waste management, recycling, and green technology. These startups and local businesses introduce innovative solutions, create green jobs, and support economic diversification in accordance with Vision 2030 (Al-Sulaiti et al., 2024). In addition to the energy and manufacturing sectors, industries such as construction, transportation, and tourism are adopting environmentally sustainable practices (Irfan et al., 2023). Construction firms are applying green building standards, transportation companies

are investing in electric vehicles and sustainable logistics, and the tourism industry is advancing eco-tourism, conserving natural heritage, and reducing environmental impact (Prakash et al., 2023).

Saudi companies are essential to the success of the Saudi Green Initiative. Their investments in renewable energy, sustainable practices, and green innovation advance environmental objectives and drive economic growth and diversification (Lu et al., 2021). Through strategic partnerships and technological progress, these organizations are shaping a sustainable future for Saudi Arabia by aligning economic development with environmental preservation.

H_2: Economic impact and Saudi Companies have an influence on Environmental Sustainability under the Saudi Green Initiative

3.3. Regulatory And Saudi Companies for Environmental Sustainability Under the Saudi Green Initiative

The Saudi Green Initiative (SGI), launched in 2021, reflects Saudi Arabia's commitment to environmental sustainability through regulatory measures and the active involvement of local companies. The government plays a pivotal role by establishing policies, laws, and frameworks that encourage sustainable practices across industries (Ogwu et al., 2025). Regulatory agencies such as the Saudi Environment Ministry (MEWA) set standards for emissions, waste management, water conservation, and renewable energy deployment (Abdelbaki, 2025). For example, regulations mandating the use of cleaner energy sources and imposing penalties for environmental violations incentivize companies to adopt eco-friendly practices. The Saudi Vision 2030 also emphasizes environmental reforms, providing a strategic blueprint for sustainable development. Saudi companies are key partners in implementing these regulations (Yusuf & Lytras, 2023). Major corporations like Saudi Aramco and SABIC are investing heavily in renewable energy projects, such as solar and wind farms, to reduce reliance on fossil fuels and meet regulatory targets (Krane & Braun 2024). Additionally, construction and infrastructure firms are adopting green building standards aligned with government regulations to promote sustainable urban development. Financial institutions and investment firms are also supporting sustainability goals by financing green projects and offering incentives for environmentally responsible investments (Fu et al., 2023). Furthermore, the public sector encourages corporate social responsibility (CSR) initiatives focused on environmental conservation, promoting a culture of compliance and sustainability (Pan et al., 2022). Overall, regulatory frameworks, in tandem with proactive Saudi companies, are vital to achieving the objectives of the Saudi Green Initiative. Together, they facilitate a transition toward a greener economy, ensuring environmental protection while supporting economic growth.

H_3: Regulatory and Saudi Companies have an influence on Environmental Sustainability under the Saudi Green Initiative

3.4. Technological Factors Influencing Environmental Sustainability Efforts of Saudi Companies Under the Saudi Green Initiative

Technological advancements are central to Saudi Arabia's efforts to achieve environmental sustainability goals outlined in the Saudi Green Initiative (SGI) (Madkhali & Sithole, 2023). As the country seeks to diversify its economy and reduce reliance on fossil fuels, innovative technologies are vital for implementing renewable energy projects, improving resource management, and decreasing carbon emissions (Anwar et al., 2025). The adoption of renewable energy technologies, particularly solar and wind power, represents a key technological factor (Oryani et al., 2023). Leading Saudi companies, including Saudi Aramco and SABIC, are investing significantly in solar energy projects, such as large-scale solar farms and green hydrogen production. These technological developments enable cleaner energy generation and advance Saudi Arabia's target of generating 50% of its energy from renewable sources by 2030 (Al-Gahtani, 2024).

Smart technologies and digital transformation are equally important. Organizations are adopting Internet of Things (IoT) solutions to improve water and energy management, minimize waste, and optimize resource use (Nguyen et al., 2025). For example, smart grids help balance energy supply and demand, which reduces fossil fuel consumption (Al-Shetwi et al., 2025). In addition, advancements in carbon capture, utilization, and storage (CCUS) technologies are essential for lowering industrial emissions. Saudi companies are actively developing CCUS projects to lessen the environmental impact of established industries. Innovations in waste management and recycling technologies further contribute to reducing environmental pollution (Cheah et al., 2022). Both startups and established firms are creating eco-friendly materials and waste-to-energy systems, supporting circular economy initiatives (Ansari et al., 2025). Overall, technological

factors are crucial in enabling Saudi companies to meet SGI objectives and foster a sustainable, environmentally responsible future for the Kingdom.

H_4: Technological Factor and Saudi Companies have an influence on Environmental Sustainability under the Saudi Green Initiative

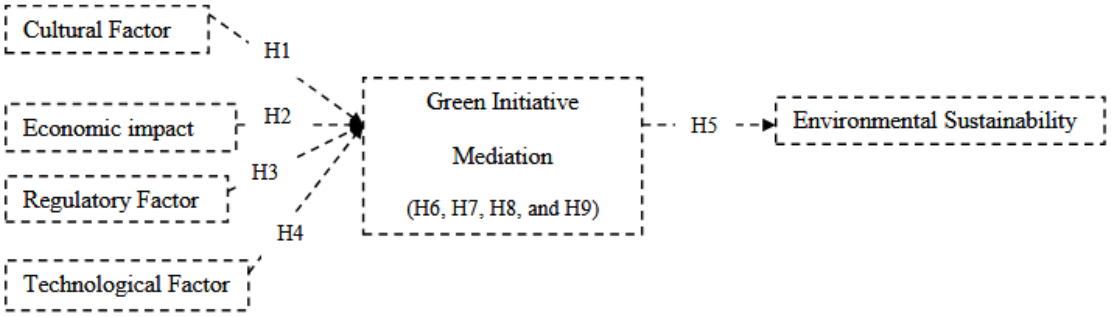

Figure 1: Development Framework.

4. METHODOLOGY

A quantitative research approach is employed to examine perceptions of environmental sustainability strategies among Saudi company workers within the context of the Saudi Green Initiative. The primary objective is to analyze perceptions related to corporate commitment and marketing efforts toward sustainability. Quantitative methods are appropriate for this investigation because they enable the quantification of attitudes, perceptions, and behaviors across a broad sample, thereby facilitating generalizable findings.

4.1. Data Collection

Data collection utilized a structured, self-administered questionnaire distributed electronically to managers and marketing professionals in Saudi companies engaged in sustainability initiatives. The questionnaire was developed using existing, validated scales on environmental commitment and marketing strategies, with adaptations for the Saudi context as indicated in appendix 1. A convenience sampling technique is used and obtained a representative sample of companies from various sectors. A validated scale from the prior research was adapted, with certain items customized to reflect initiatives specific to Saudi Arabia. Reliability and validity are assessed using Cronbach's alpha, composite reliability and extracted variance extracted AVE and exploratory factor analysed and ensure internal consistency and construct validity.

4.2. Data Analysis

Data analysis conducted using SPSS to generate initial descriptive statistics, including frequency distributions and regression. In examining hypothesized relationships among variables SPSS software is used and analysed the research. Structural Equation Modeling (SEM) facilitates the simultaneous analysis of multiple relationships, offering insights into how perceived commitment influences marketing strategies and overall sustainability perceptions. This analytical approach provides a comprehensive understanding of the direct and indirect effects within the conceptual framework, supporting the objective of elucidating Saudi companies' perceptions and strategies regarding environmental sustainability under the Saudi Green Initiative.

Table 1: Demographic Respondents.

Demographic	Type	Frequency	Percentage
Gender	Male	276	92
	Female	24	7
Age	20 -30	90	30
	31-40	135	45
	41-50	45	15
	More than 50	30	10
Marital Status	Married	180	60
	Single	120	40
Education	Secondary School	81	27
	Diploma	130	40

	Higher Education	90	30
	Postgraduate	9	3
Sector	Wholesale commercial enterprises	30	10
	Small productive and industrial enterprises	210	70
	Small service enterprises	60	20

Table 1 summarizes the demographic characteristics of the study respondents, including gender, age, marital status, educational level, and employment sector. For each category, both the frequency and percentage of respondents are reported. The sample consists of 276 males (92%) and 24 females (7%). Regarding age, 90 respondents (30%) are aged 20-30 years, 135 (45%) are aged 31-40 years, 45 (15%) are aged 41-50 years, and 30 (10%) are aged 51+ years. Regarding marital status, 180 respondents (60%) are married and 120 (40%) are single. Educational attainment includes 81 respondents (27%) with secondary school education, 130 (40%) with a diploma, 90 (30%) with higher education, and 9 (3%) with a postgraduate degree. Employment sectors are represented as follows: 30 respondents (10%) in small retail and wholesale commercial enterprises, 210 (70%) in small productive and industrial enterprises, and 60 (20%) in small service enterprises. The data indicate that the majority of respondents are male, predominantly aged 31-40 years, married, and possess a diploma or higher education. Most participants are employed in small productive and industrial enterprises, which constitute the primary focus of the sample.

Table 2: Factor Loadings and Reliability and Validity.

Construct (s)	Factor Loadings	Composite Reliability (CR)	Average Variance Extracted (AVE)	Cronbach's Alpha (CA)
CulF		**0.881**	**0.838**	**0.819**
CulF1	0.776			
CulF2	0.873			
CulF3	0.861			
CulF4	0.842			
EconI		**0.879**	**0.791**	**0.850**
EconI1	0.761			
EconI2	0.843			
EconI3	0.812			
EconI4	0.804			
EconI5	0.738			
RegF		**0.793**	**0.786**	**0.785**
RegF1	0.745			
RegF2	0.828			
RegF3	0.778			
RegF4	0.794			
TechF		**0.789**	**0.845**	**0.705**
TechF1	0.836			
TechF2	0.857			
TechF3	0.843			
GI		**0.781**	**0.768**	**0.703**
GI1	0.814			
GI2	0.773			
GI3	0.732			
GI4	0.755			
ES		**0.872**	**0.817**	**0.847**
ES1	0.811			
ES2	0.782			
ES3	0.831			
ES4	0.844			

Table 2 displays factor loadings and associated measures of reliability and validity for the constructs examined in this study. These constructs are CulF (Cultural Factors), EconI (Economic Influence), RegF (Regulatory Factors), TechF (Technological Factors), GI (Globalization Impact), and ES (Environmental Sustainability).

The factor loadings demonstrate that each item (e.g., CulF1, EconI2) is strongly associated with its respective construct, with values generally exceeding

0.7. Composite reliability (CR) values range from 0.793 to 0.881, surpassing the recommended threshold of 0.7 and confirming strong internal consistency. Average Variance Extracted (AVE) values, which represent the proportion of variance captured by the construct relative to measurement error, are all above 0.7, supporting convergent validity. Cronbach's Alpha (CA) values, indicating internal consistency within each construct, range from 0.703 to 0.850, further substantiating reliability.

Collectively, these findings indicate that the measurement model is reliable and valid. Each construct exhibits strong factor loadings, high internal consistency, and satisfactory validity measures, confirming the robustness of the measurement instruments employed in this study.

Table 3: Discriminant Validity.

Variables	(1)	(2)	(3)	(4)	(5)	(6)
CulF	**0.702**					
EconI	0.591	**0.625**				
RegF	0.657	0.679	**0.617**			
TechF	0.762	0.661	0.444	**0.714**		
GI	0.682	0.542	0.453	0.643	**0.589**	
ES	0.688	0.498	0.334	0.543	0.666	**0.667**

The table presents an assessment of discriminant validity among six variables: Cultural Factors (CulF), Economic Impact (EconI), Regulatory Factors (RegF), Technological Factors (TechF), Green Initiative (GI), and Environmental Sustainability (ES). Discriminant validity is used to confirm that each construct is distinct and measures a unique concept. Typically, the diagonal elements are the square roots of the AVEs, which should be greater than the off-diagonal correlations for discriminant validity to be established. The off-diagonal values indicate the correlations between different constructs. For instance, CulF correlates with EconI at 0.591 and with RegF at 0.657, reflecting moderate correlations.

For adequate discriminant validity, correlations between constructs should be lower than the square root of each construct's AVE and ideally less than 0.85 to mitigate multicollinearity concerns. In this table, most correlations are below 0.7, which suggests acceptable discriminant validity and indicates that each construct is sufficiently distinct from the others. Some correlations, such as those between CulF and RegF (0.657) and between CulF and TechF (0.762), are relatively high, indicating some conceptual overlap. However, these values remain within acceptable limits. Overall, the observed pattern supports the discriminant validity of the constructs and the validity of the measurement model.

Table 4: Testing Hypotheses.

Hypotheses	Relationship	B	Std.	CR	p	Decision
H_1	**CulF ->GI**	0.320	0.069	4.640	***	Supported
H_2	**EconI ->GI**	0.230	0.059	3.899	0.002	Supported
H_3	**RegF ->GI**	0.211	0.045	4.688	***	Supported
H_4	**TechF ->GI**	0.301	0.080	3.762	0.004	Supported
H_5	**GI ->ES**	0.404	0.090	4.488	***	Supported

The Table 4 displays the results of hypothesis testing for the proposed relationships among the study variables. Each hypothesis assesses the effect of one construct on another, utilizing statistical indicators including the coefficient (B), standard error (Std.), critical ratio (CR), p-value, and the corresponding decision regarding hypothesis support. H1 posits that Cultural Factors (CulF) influence Globalization Impact (GI). The positive coefficient (0.320) indicates a moderate positive relationship, and the CR value of 4.640, which exceeds the threshold of 1.96, together with the p-value ($p<0.001$), confirms statistical significance. Thus, H1 is supported. H2 proposes that Economic Influence (EconI) affects GI. The coefficient (0.230), CR of 3.899, and p-value of 0.002 indicate a significant positive effect, supporting H2. H3 asserts that Regulatory Factors (RegF) impact GI. The coefficient (0.211), CR of 4.688, and p-value less than 0.01 provide support for this hypothesis. H4 states that Technological Factors (TechF) influence GI. The coefficient (0.301), CR of 3.762, and p-value of 0.004 confirm significance and support H4. H5 posits that Globalization Impact (GI) affects Environmental Sustainability (ES). The positive coefficient (0.404), CR of 4.488, and $p<0.001$ support this relationship. Collectively, these results indicate that each factor significantly influences GI, and GI, in turn, impacts ES. The statistical findings support the validity of the proposed theoretical framework.

Table 5: Mediation Role of Green Initiative.

Hypotheses	Mediation	Direct Effect	Indirect effect	Mediation Decision	Comments
H_6	**CulF ->GI->ES**	0.000	0.000	Mediated	Partial mediated
H_7	**EconI ->GI->ES**	0.002	0.000	Mediated	Partial mediated
H_8	**RegF ->GI->ES**	0.004	0.002	Mediated	Partial mediated
H_9	**TechF ->GI->ES**	0.000	0.001	Mediated	Partial mediated

Table 5 analyzes the mediating role of the Green Initiative (GI) in the relationship between several antecedents and Environmental Sustainability (ES). The table reports direct effects, indirect effects via GI, mediation decisions, and comments on the mediation type. The findings indicate that cultural factors do not exert a direct effect on ES but influence it indirectly through GI, demonstrating partial mediation. This suggests that GI accounts for part of the relationship, while cultural factors may also affect ES through alternative pathways. Economic influence primarily impacts ES through GI, as evidenced by a minimal direct effect and a substantial indirect effect, indicating that most of the influence is mediated by GI. Regulatory factors affect ES both directly and indirectly via GI, with the indirect effect being significant but smaller than the direct effect, which also reflects partial mediation. Technological factors lack a direct effect on ES but exert an indirect influence through GI, again suggesting partial mediation and the potential involvement of additional factors. Overall, the results demonstrate that GI partially mediates the relationship between all examined constructs and ES. While each factor may have a direct influence on ES (with some exceptions where the direct effect is negligible), a considerable portion of their impact is transmitted through the Green Initiative. These findings underscore the pivotal role of GI as a mechanism by which cultural, economic, regulatory, and technological factors contribute to environmental sustainability.

5. DISCUSSION

This study investigates the alignment of Saudi companies' strategies with the Saudi Green Initiative (SGI), emphasizing their commitment to environmental sustainability (ES) and the marketing strategies that facilitate this objective. It examines the cultural, economic, regulatory, and technological factors influencing the adoption and effectiveness of green initiatives, as well as their impact on corporate environmental actions and perceptions. Table 1: Descriptive statistics and measures of the demographic data of the respondents who participated in the research.

Table 2 reports factor loadings, reliability, and validity among variables, confirming that the constructs demonstrate Cronbach's alpha, composite reliability, average variance extracted, and discriminant validity are also assessed in Table 3, where the adequate discriminant validity, correlations between constructs should be lower than the square root of each construct's AVE and ideally less than 0.85 to mitigate multicollinearity concerns. Most correlations are below 0.7, suggesting acceptable discriminant validity and indicating that each construct is sufficiently distinct from the others. Some correlations, such as those between CulF and RegF (0.657) and between CulF and TechF (0.762).

Table 4 demonstrates that all hypothesized relationships are supported, indicating significant positive effects of cultural, economic, regulatory, and technological factors on Green Initiative (GI), which, in turn, influences Environmental Sustainability (ES). Cultural factors (CulF), economic influence (EconI), regulatory environment (RegF), and technological factors (TechF) each significantly affect GI, and GI, in turn, positively impacts ES. These findings suggest that Saudi firms' perceptions of green and environmental initiatives are shaped by their cultural context, economic conditions, regulatory policies, and technological advancements. Such variables confirm that the (CulF, EconI, RegF, TechF) exerts a significant positive effect on GI, and that GI significantly influences ES. Therefore, Saudi companies demonstrate the importance of aligning strategies with cultural norms, economic incentives, regulatory requirements, and technological capabilities to effectively promote environmental sustainability. These strong linkages underscore the need for an integrated approach to successful green marketing and sustainability initiatives. Table 5 indicates that the Mediation Role of the Green Initiative mediates the relationship between each dependent variable and ES. The findings indicate partial mediation in all cases, suggesting that GI serves as a significant pathway. Cultural, economic, regulatory, and technological factors influence ES both directly, although some direct effects are minimal or negligible, and indirectly through GI. Partial mediation indicates that additional pathways

contribute to environmental sustainability beyond GI. Saudi companies' green strategies are shaped by both GI mediation and direct influences, underscoring the need for a comprehensive sustainability approach.

Overall Findings and Strategic Implications: commitment to Environmental Sustainability Saudi companies demonstrate a strong commitment to integrating environmental sustainability into their core strategies, motivated by cultural values, economic benefits, regulatory compliance, and technological advancements. The SGI provides a pivotal framework that encourages the adoption of green initiatives. The observed partial mediation suggests that, while GI is essential, other factors such as direct management commitment and market pressures also influence sustainability outcomes. Companies can leverage green initiatives to enhance brand reputation, meet regulatory standards, and align with cultural expectations. Effective marketing strategies should highlight an authentic commitment to sustainability and align with national initiatives such as SGI to strengthen consumer trust and gain a competitive advantage.

Policy and Regulatory Support: The significant impact of regulatory factors underscores the importance of supportive policies and incentives that motivate corporate environmental action. Technological capabilities enable greener operations and marketing, positioning innovation as a key strategic component.

6. CONCLUSION

An integrated analysis of Tables 1 to 5 indicates that Saudi companies increasingly recognize environmental sustainability as a strategic priority, shaped by cultural, economic, regulatory, and technological factors. The Saudi Green Initiative provides a national framework that fosters corporate commitment, with green initiatives facilitating the conversion of these influences into measurable environmental actions. To strengthen marketing and branding, Saudi companies are advised to prioritize genuine sustainability efforts aligned with the Saudi Green Initiative, utilizing technological innovation and regulatory support to improve environmental reputation and fulfill corporate social responsibility.

7. LIMITATIONS AND FUTURE STUDIES

A primary limitation of this study is its reliance on perceptual data, which may introduce bias and may not accurately reflect actual corporate practices. The cross-sectional design further restricts the ability to understand changes over time. Future research should consider longitudinal studies to evaluate the evolution of strategies and the impacts of the Saudi Green Initiative. Expanding the sample to encompass a wider range of industries and company sizes would improve the generalizability of findings. Additionally, qualitative methods such as interviews could yield deeper insights into corporate motivations and challenges. Investigating consumer perceptions and responses to green marketing strategies can also yield valuable insights for aligning corporate sustainability initiatives with market expectations.

APPENDIX 1

Measurement Item

Item	Questionnaire	Scale
Cultural Factors (CulF)		
CulF1	To what extent do you believe Saudi cultural values influence your company's environmental strategies?	(1 - Not at all, 5 - To a great extent)
CulF2	How important is environmental responsibility as part of your company's cultural identity?	(1 - Not important, 5 - Very important)
CulF3	Does your company actively promote environmental awareness aligned with Saudi cultural norms?	(1 - Not at all, 5 - Very much)
CulF4	To what degree does cultural heritage motivate your company's sustainable practices?	(1 - Not at all, 5 - To a great extent)
Economic Impact (EconI)		
EconI1	How significantly do economic incentives influence your company's investment in environmental initiatives?	(1 - Not at all, 5 - Very significantly)
EconI2	To what extent do environmental sustainability practices contribute to your company's financial performance?	(1 - Not at all, 5 - To a great extent)
EconI3	Does the economic cost of implementing green strategies affect your company's commitment to sustainability?	(1 - Not at all, 5 - Very much)
EconI4	How important are potential cost savings from sustainable practices in your company's decision-making?	(1 - Not important, 5 - Very important)
EconI5	To what degree does the Saudi Green Initiative create economic opportunities for your company?	(1 - No opportunities, 5 - Significant opportunities)
Regulatory Factors (RegF)		

RegF1	How strongly do local environmental regulations influence your company's sustainability strategies?	(1 - Not at all, 5 - Very strongly)
RegF2	Does compliance with Saudi environmental laws affect your company's marketing of green products?	(1 - Not at all, 5 - Significantly)
RegF3	To what extent do regulatory incentives encourage your company's adoption of green initiatives?	(1 - Not at all, 5 - To a great extent)
RegF4	How well does your company stay updated on new environmental policies under the Saudi Green Initiative?	(1 - Not well, 5 - Very well)
Technological Factors (TechF)		
TechF1	How critical is technological innovation in achieving your company's environmental sustainability goals?	(1 - Not critical, 5 - Extremely critical)
TechF2	Does your company invest in new green technologies to support sustainability?	(1 - Not at all, 5 - Very much)
TechF3	To what extent do technological advancements influence your company's green marketing strategies and enhance sustainability efforts?	(1 - Not at all, 5 - To a great extent)
Green Initiative (GI)		
GI1	How actively does your company participate in the Saudi Green Initiative's programs?	(1 - Not active, 5 - Very active)
GI2	To what degree are green initiatives integrated into your company's overall strategy?	(1 - Not integrated, 5 - Fully integrated)
GI3	How important are green initiatives for your company's branding and marketing efforts?	(1 - Not important, 5 - Very important)
GI4	Does your company set specific targets related to green initiatives in improving environmental sustainability?	(1 - No, not at all, 5 - Yes, very specific)
Environmental Sustainability (ES)		
ES1	How would you rate your company's overall commitment to environmental sustainability?	(1 - Low, 5 - High)
ES2	To what extent do your company's sustainability practices align with the goals of the Saudi Green Initiative?	(1 - Not at all aligned, 5 - Fully aligned)
ES3	How important is environmental sustainability in your company's long-term strategic planning?	(1 - Not important, 5 - Very important)
ES4	Does your company regularly report on its environmental sustainability performance?	(1 - Not at all, 5 - Regularly)

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