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Perceived ESG Practices, Consumer Behavior, and Brand Loyalty in Qatar: The Mediating Roles of Digital Transformation and Sustainable Performance

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Abstract

This study examines whether consumers' perceptions of firms' environmental, social, and governance (ESG) practices influence consumer behavior and brand loyalty in Qatar, and whether these relationships operate through two implementation mechanisms: perceived digital transformation and sustainable performance. A cross-sectional questionnaire generated 384 usable responses from consumers residing in Qatar. The direct relationships were assessed through regression analysis, while indirect relationships were examined through path analysis in AMOS. Internal consistency was evaluated using Cronbach's alpha. Perceived ESG practices were positively associated with consumer behavior (standardized beta = .903, $p < .001$) and brand loyalty (standardized beta = .850, $p < .001$). Digital transformation partially mediated the ESG–consumer behavior relationship (standardized indirect effect = .167, $p < .001$), whereas sustainable performance partially mediated the ESG–brand loyalty relationship (standardized indirect effect = .648, $p < .001$). Exploratory models showed that environmental and governance perceptions predicted both outcomes, while the social dimension was not significant after controlling for the other ESG dimensions. The study shifts ESG analysis from predominantly financial and firm-level outcomes toward consumer-facing outcomes in an underexamined Gulf economy. It also specifies two distinct translation mechanisms: digital transformation makes ESG visible and accessible at customer touchpoints, whereas sustainable performance makes ESG credible through perceived operational results. The cross-sectional, self-reported design limits causal inference. Full measurement-model statistics and common-method diagnostics require re-estimation from the raw item-level dataset before journal submission.

1. Introduction

Environmental, social, and governance (ESG) practices have moved from the margins of corporate disclosure to the center of strategic management. Firms are increasingly evaluated not only by the functional and economic value of their offerings but also by how they manage environmental externalities, stakeholder relationships, ethical conduct, transparency, and accountability. Although much ESG research continues to focus on financial performance, investment risk, disclosure quality, and market valuation, consumers encounter ESG primarily as a set of signals about what a company represents and whether its conduct merits trust, purchase, recommendation, and continued patronage (Boufounou et al., 2023; Koh et al., 2022; Puriwat & Tripopsakul, 2023). This consumer-facing perspective is important because ESG programs create strategic value only when relevant stakeholders can perceive, interpret, and act on them.

The consumer consequences of ESG are not theoretically automatic. Corporate claims about sustainability and responsibility may be difficult to evaluate, especially when consumers cannot directly observe internal operations. ESG communication can therefore reduce information asymmetry, but it can also be discounted as symbolic, selective, or opportunistic. Existing studies report both positive and differentiated effects. For example, perceived ESG has been associated with brand credibility, image, trust, attachment, purchase intentions, engagement, and loyalty; however, studies disagree about which ESG pillar is most salient and whether every pillar produces a direct consumer response (Koh et al., 2022; Tripopsakul & Puriwat, 2022; Hasan et al., 2024). Such divergence implies that the central question is not merely whether ESG matters, but how ESG commitments are converted into consumer-relevant evidence.

This study proposes two mechanisms through which perceived ESG practices may produce consumer outcomes. The first is digital transformation. Digital platforms, integrated service processes, data-enabled communication, and responsive customer interfaces can make ESG information timely, searchable, traceable, and personally relevant. Digital transformation can therefore function as a visibility and accessibility mechanism: it brings sustainability claims into the customer journey and enables consumers to observe whether a firm's declared values shape service delivery. The second

mechanism is sustainable performance. Consumers may reward ESG claims only when those claims appear to produce substantive outcomes, such as resource efficiency, environmental improvement, sustainable innovation, and a credible balance between economic and stakeholder value. Sustainable performance consequently functions as an evidence and credibility mechanism.

The Qatari setting provides a theoretically useful context. Qatar is a high-income, rapidly modernizing economy in which sustainability, digitalization, service quality, and institutional development intersect. Consumers operate in a market characterized by extensive digital technology use, a diverse population, high exposure to global brands, and increasing public attention to sustainable development. At the same time, consumer-oriented ESG evidence from Qatar and the wider Gulf remains limited compared with evidence from East Asia, Europe, and North America. Studying Qatar therefore tests whether ESG–consumer relationships observed elsewhere also emerge in a Gulf economy and whether the translation mechanisms are transferable across institutional and cultural settings.

The research problem is that the current literature does not adequately explain how perceived ESG practices become consumer behavior and durable brand loyalty in Qatar. Three specific gaps motivate the study. First, a substantial share of ESG scholarship remains finance-centric and firm-centric, leaving consumer behavior comparatively underdeveloped. Second, prior consumer studies often model brand image, credibility, trust, or attitude as mediators, while paying less attention to implementation mechanisms that connect ESG strategy with digital customer experience and perceived sustainability results. Third, the Gulf region remains underrepresented, limiting understanding of the contextual boundaries of established ESG–consumer models.

Accordingly, the study addresses five research questions: (RQ1) Are perceived ESG practices positively associated with consumer behavior in Qatar? (RQ2) Are perceived ESG practices positively associated with brand loyalty? (RQ3) Does digital transformation mediate the relationship between perceived ESG practices and consumer behavior? (RQ4) Does sustainable performance mediate the relationship between perceived ESG practices and brand loyalty? (RQ5) Do the environmental, social, and governance dimensions differ in their associations with consumer behavior and brand loyalty?

The corresponding objectives are to estimate the direct effects of perceived ESG practices on consumer behavior and brand loyalty; test digital transformation and sustainable performance as mediating mechanisms; compare the relative contributions of the environmental, social, and governance pillars; and derive theoretically grounded recommendations for managers and regulators. These objectives are significant for marketing theory because they connect institutional responsibility signals with consumer responses, and for analytics because they specify and estimate alternative pathways through which a multidimensional strategic construct produces market outcomes.

The study makes three contributions. Theoretically, it integrates stakeholder theory, signaling theory, and the stimulus–organism–response framework to explain why ESG signals are interpreted through perceived implementation mechanisms before producing behavioral responses. Empirically, it adds evidence from Qatar and identifies a differentiated subdimension pattern in which environmental and governance factors are more predictive than social factors in multivariate models. Managerially, it distinguishes between digital visibility and substantive sustainability performance, showing that firms must both communicate ESG through credible digital touchpoints and demonstrate measurable outcomes. The findings may be analytically transferable to other high-income, digitally advanced emerging economies, particularly Gulf Cooperation Council markets, although statistical generalization beyond Qatar requires replication. The remainder of the article develops the theoretical framework and hypotheses, describes the research design and analytical strategy, reports the results, and discusses their theoretical, managerial, regulatory, and research implications.

2. Literature Review and Theoretical Framework

2.1. Stakeholder theory

Stakeholder theory holds that firms create and preserve value by recognizing and balancing the legitimate interests of multiple stakeholder groups rather than treating shareholder returns as the sole criterion of performance (Freeman, 1984). Consumers are central stakeholders because their purchasing, advocacy, complaint, and switching decisions affect revenue, legitimacy, and long-term viability. Environmental stewardship, fair treatment of employees and communities, responsible products, and sound governance can therefore be understood as stakeholder-oriented practices that influence the quality of the firm–consumer relationship. From this perspective, perceived ESG practices indicate whether a firm is responsive to stakeholder expectations. Consumers may reciprocate responsible treatment with favorable evaluations, purchase behavior, recommendation, and loyalty. Yet stakeholder theory alone does not specify how consumers obtain reliable information about largely internal practices. For that reason, signaling theory is required to explain the informational process through which ESG becomes observable and credible.

2.2. Signaling theory

Signaling theory addresses decisions under information asymmetry (Spence, 1973). Firms possess more information than consumers about the environmental impact of operations, treatment of stakeholders, internal controls, and governance quality. ESG initiatives and disclosures may serve as signals of responsibility, competence, integrity, and long-term orientation. Signals influence behavior when they are observable, consistent, costly to imitate, and supported by evidence.

The theory also explains why digital transformation and sustainable performance are plausible mediators. Digitally enabled transparency, traceability, service responsiveness, and stakeholder communication increase signal visibility and reduce search costs (Elaish et al., 2026a, 2026b). Sustainable performance increases signal credibility because it links promises to perceived outcomes. In contrast, unsupported claims, inconsistent interfaces, and unverifiable achievements weaken signal quality and expose firms to skepticism or accusations of greenwashing.

2.3. Stimulus–organism–response framework

The stimulus–organism–response (S–O–R) framework proposes that external stimuli affect behavioral responses through internal evaluations and states (Mehrabian & Russell, 1974). In the present model, perceived ESG practices constitute the stimulus. Digital transformation and sustainable performance represent consumer evaluations of how effectively ESG is implemented and experienced. Consumer behavior and brand loyalty are the responses. This framework helps distinguish a direct route, in which ESG perceptions immediately influence judgments, from indirect routes, in which consumers first appraise digital capability or sustainability performance. Combining the three theories produces a coherent sequence: stakeholder theory explains why ESG practices are relevant to consumers; signaling theory explains how information about those practices is conveyed and authenticated; and S–O–R explains how the signals are evaluated and converted into behavioral responses.

2.4. Perceived ESG practices and consumer behavior

Consumer behavior in this study encompasses evaluative and decision tendencies toward brands, including information search, consideration, purchase-related judgments, and behavioral engagement. ESG practices can affect these tendencies by providing cues about product responsibility, organizational reliability, ethical alignment, and future orientation. Evidence generally supports positive effects of perceived ESG or CSR on attitudes, trust, engagement, and purchase intentions (Boufounou et al., 2023; Hasan et al., 2024; Shahzad et al., 2024). However, the effects are not uniform. Koh et al. (2022) found that social and governance perceptions affected brand-related evaluations while the environmental dimension did not exert the same direct effects. Hasan et al. (2024), by contrast, reported the environmental dimension as the strongest predictor of customer behavior in a developing-country student sample. Other research highlights an attitude–behavior gap: consumers may endorse sustainability in principle without changing actual purchasing when price, convenience, quality, skepticism, or limited information dominate the decision. These divergent findings justify testing the aggregate ESG relationship and examining the pillars separately in Qatar.

H1. Perceived ESG practices are positively associated with consumer behavior.

2.5. Perceived ESG practices and brand loyalty

Brand loyalty reflects a durable preference expressed through repurchase intention, recommendation, resistance to switching, and willingness to maintain the relationship. ESG can strengthen loyalty by adding moral, relational, and identity-based value to functional brand performance. When consumers perceive a firm as responsible and well governed, the brand may become more trustworthy, meaningful, and congruent with their values (Puriwat & Tripopsakul, 2023; Yuan et al., 2024). Nevertheless, ESG activities can fail to create loyalty when consumers perceive them as inauthentic, irrelevant, inconsistent with core operations, or inferior to competing functional benefits. Negative interpretations of CSR can even contribute to disloyalty, particularly when the initiative appears manipulative or when performance contradicts communication. The relationship therefore requires empirical testing rather than assumption.

H2. Perceived ESG practices are positively associated with brand loyalty.

2.6. Digital transformation as a mediating mechanism

Digital transformation refers here to consumers' perceptions that firms use integrated digital technologies to improve efficiency, customer experience, transaction transparency, stakeholder communication, and the digitalization of sustainability initiatives. This construct is not merely technology adoption; it captures whether digital capability changes how consumers access information and interact with the firm. ESG orientation may encourage investment in data systems, traceability, reporting interfaces, responsive channels, and digitally supported stakeholder engagement. These capabilities can make ESG commitments visible at the point of decision. Prior research has linked digital transformation with ESG performance through internal control, information processing, green innovation, and reduced information asymmetry (Lu et al., 2023; Wu & Li, 2023). Consumer research also suggests that digital transformation conditions or strengthens some ESG effects, although results vary across ESG dimensions (Hasan et al., 2024). In the present model, digital transformation is conceptualized as a mediator rather than a moderator: ESG perceptions are expected to be associated with stronger perceived digital implementation, which in turn is associated with consumer behavior.

H3. Digital transformation mediates the positive relationship between perceived ESG practices and consumer behavior.

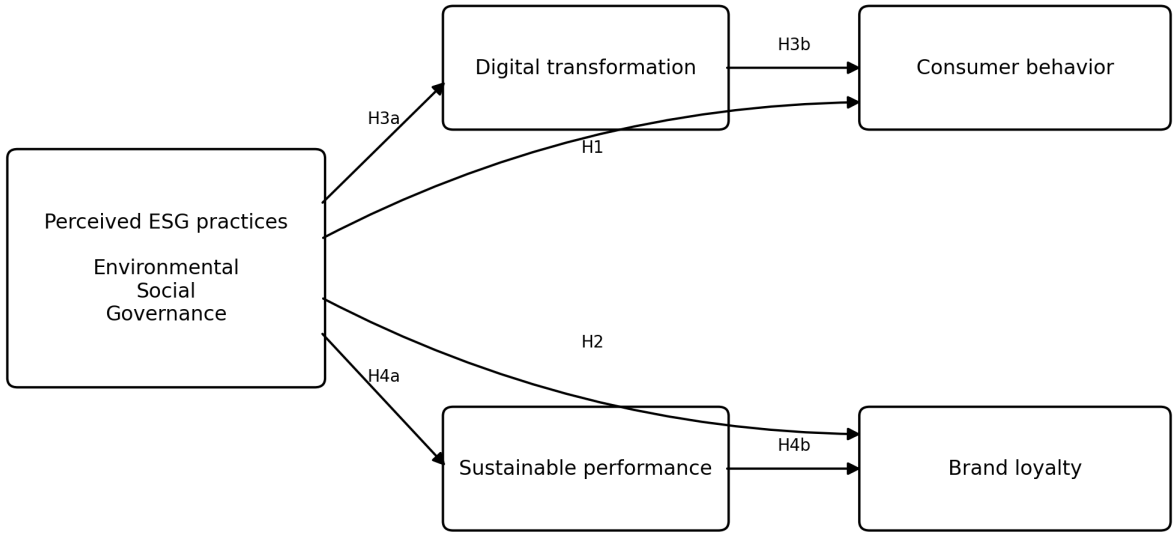
2.7. Sustainable performance as a mediating mechanism

Sustainable performance captures consumers' perceptions that firms convert sustainability commitments into balanced economic, environmental, and innovation outcomes. It includes efficient resource use, environmental improvement, investment in renewable or lower-impact initiatives, sustainable innovation, and long-term value creation. The distinction between ESG practices and sustainable performance is analytically important: the former concerns perceived managerial

conduct and responsibility, whereas the latter concerns perceived results. Signaling theory predicts that outcome evidence strengthens signal credibility. Stakeholder theory similarly suggests that responsible practices create relational value when they generate benefits that stakeholders can recognize. Sustainable performance should therefore be especially relevant to loyalty, because loyalty depends on consistency over time and confidence that the brand can deliver on its promises. If ESG practices enhance perceptions of sustainable performance and those perceptions increase loyalty, sustainable performance will transmit part of the ESG effect.

H4. Sustainable performance mediates the positive relationship between perceived ESG practices and brand loyalty.

Figure 1. Proposed conceptual model



Note. H3 and H4 represent indirect (mediated) pathways; direct paths are retained to test partial versus full mediation.

3. Method

3.1. Research design and unit of analysis

The study adopted a quantitative, cross-sectional survey design. The unit of analysis was the individual consumer residing in Qatar. The study did not draw a sample of firms and cannot support claims that the participating companies are representative of the Qatari economy. Instead, it measures market-level consumer perceptions of companies and brands encountered in Qatar. This distinction directly limits firm-level inference but is consistent with the study's purpose of explaining consumer judgments rather than audited organizational ESG performance.

3.2. Population, sampling, and sample-size determination

The target population comprised consumers residing in Qatar who were able to evaluate corporate practices and brand-related experiences. A total of 384 usable questionnaires were included in the analysis. The minimum sample size was justified using Cochran's formula for a large or unknown population: $n0 = z^2p(1 - p)/e^2$. At a 95% confidence level ($z = 1.96$), maximum variability ($p = .50$), and a 5% margin of error ($e = .05$), the calculation yields 384.16, conventionally rounded to 384. This benchmark supports the numerical adequacy of the achieved sample for estimating population proportions under simple random sampling assumptions; it does not by itself eliminate selection bias when non-probability recruitment is used (Cochran, 1977).

3.3. Data-collection procedure and research ethics

The study used a self-administered questionnaire. Participation was voluntary, and responses were analyzed in anonymized form. The introductory page should state the study purpose, expected completion time, confidentiality protections, right to decline or withdraw before submission, and contact details for the research team. No directly identifying information should be retained in the analytical dataset unless separately justified and protected.

3.4. Instrument development and pretesting

The questionnaire comprised demographic items and five multi-item constructs measured on a five-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). Perceived ESG practices were represented by environmental, social, and governance items; consumer behavior captured brand-related evaluation and decision tendencies; brand loyalty captured repurchase, recommendation, preference, premium willingness, and switching

resistance; digital transformation captured efficiency, AI-enabled experience, transaction transparency, process integration, stakeholder communication, and the digitalization of sustainability; and sustainable performance captured balanced value creation, renewable initiatives, environmental improvement, sustainable innovation, resource management, and energy efficiency.

A rigorous pretest should include two distinct stages. First, subject-matter experts assess content validity, construct coverage, wording, and contextual suitability for Qatar. Second, a pilot sample from the target population evaluates clarity, completion time, interpretation, and technical usability. Translation, where applicable, should use forward translation and independent backtranslation, followed by reconciliation. Any revised or deleted item should be documented to preserve the audit trail.

3.5. Measures

Table 1. Construct operationalization

Construct	Items	Operational domain	Indicative literature source
Perceived ESG practices	18	Environmental, social, and governance conduct perceived by consumers	Koh et al. (2022); Hasan et al. (2024); related ESG/CSR scales
Consumer behavior	21	Brand evaluation, information search, decision tendencies, and behavioral engagement	Consumer-behavior and customer-engagement literature; exact source to verify
Brand loyalty	7	Repurchase, recommendation, preference, premium willingness, and switching resistance	Brand-loyalty literature; exact source to verify
Digital transformation	6	Efficiency, AI-enabled experience, transparency, integration, communication, and sustainability digitalization	Digital-transformation literature; exact source to verify
Sustainable performance	6	Balanced value, renewable initiatives, environmental performance, sustainable innovation, resources, and energy efficiency	Sustainable-performance literature; exact source to verify

3.6. Procedural and statistical controls for common method bias

Because predictor, mediator, and outcome variables were collected from the same respondent in a single survey, common method variance is a material design risk. Recommended procedural controls include protecting anonymity, using neutral instructions, separating predictor and outcome blocks psychologically, varying scale anchors where defensible, avoiding ambiguous or evaluative wording, counterbalancing item order, and assuring respondents that there are no correct answers (Podsakoff et al., 2003, 2012). Statistical assessment should not rely on a single diagnostic. Harman's single-factor test may be reported as a preliminary check, but a common latent factor approach or full-collinearity VIF assessment provides stronger evidence.

3.7. Analytical strategy

The analysis proceeded in four stages. First, data screening should evaluate missingness, straight-lining, duplicate cases, univariate and multivariate outliers, and distributional characteristics. Second, the measurement model should be evaluated using item loadings, Cronbach's alpha, composite reliability (CR), average variance extracted (AVE), and discriminant validity. Third, descriptive statistics, correlations, and regression models should assess direct effects. Fourth, path analysis in AMOS should estimate indirect effects. Mediation should be evaluated using bias-corrected bootstrap confidence intervals, with at least 5,000 resamples, rather than coefficient reduction alone. Partial mediation is supported when both the indirect effect and the direct effect with the mediator included are statistically significant.

For convergent validity, standardized factor loadings should generally exceed .70, CR and Cronbach's alpha should exceed .70, and AVE should exceed .50. Collinearity should be examined using VIF. Discriminant validity should be evaluated using both the Fornell–Larcker criterion and the heterotrait–monotrait ratio (HTMT), with HTMT values below .85 or .90 depending on construct similarity (Fornell & Larcker, 1981; Henseler et al., 2015; Hair et al., 2019).

4. Results

4.1. Respondent characteristics

The final analytical sample comprised 384 respondents. Men represented 57% and women 43% of the sample. Most respondents were aged 21–40 years, held at least a bachelor's degree, and reported regular or constant use of digital technologies. The profile therefore reflects a digitally active consumer sample, although it is not evidence of population representativeness. Table 2 presents the respondent characteristics.

Table 2. Respondent profile (N = 384)

Category	Subcategory	n	%
Gender	Male	220	57
Gender	Female	164	43
Age	Less than 20 years	27	7
Age	21–30 years	141	37
Age	31–40 years	204	53
Age	More than 45 years	12	3
Education	Bachelor's	212	55

Education	Master's	93	24
Education	PhD	17	4
Education	Technical school	37	10
Education	High school or less	25	7
Occupation	Employer	201	52
Occupation	Employee	149	39
Occupation	Student	20	5
Occupation	Not working	14	4
Digital technology use	Always	58	15
Digital technology use	Regularly	294	77
Digital technology use	Sometimes	32	8

4.2. Reliability and descriptive statistics

Cronbach's alpha ranged from .729 for sustainable performance to .986 for perceived ESG practices, meeting the conventional .70 criterion. The very high alpha for perceived ESG practices may indicate strong internal consistency but may also suggest item redundancy and should be examined alongside factor loadings and inter-item correlations. Mean values were above the scale midpoint for all constructs. Sustainable performance had the highest mean (M = 4.03, SD = .86), followed by consumer behavior and brand loyalty (both M = 3.96), perceived ESG practices (M = 3.93), and digital transformation (M = 3.63).

Table 3. Construct reliability and descriptive statistics

Construct	Items	Cronbach's alpha	Mean	SD
Perceived ESG practices	18	.986	3.93	1.14
Consumer behavior	21	.956	3.96	.85
Brand loyalty	7	.892	3.96	.83
Digital transformation	6	.915	3.63	.88
Sustainable performance	6	.729	4.03	.86

4.3. Measurement-model validity and common method bias

The supplied analytical summary contains Cronbach's alpha but does not contain standardized item loadings, composite reliability, AVE, construct correlations, Fornell–Larcker values, HTMT ratios, indicator or construct VIF values, or common method diagnostics. Consequently, convergent validity, discriminant validity, multicollinearity, and common method bias cannot be demonstrated from the current aggregate output. These statistics must be re-estimated from the raw item-level dataset before submission. Reporting values would compromise the integrity and reproducibility of the study.

4.4. Direct effects

H1 was supported. Perceived ESG practices were positively associated with consumer behavior (B = .674, standardized beta = .903, t = 40.973, p < .001), explaining 81.5% of the variance (R^2 = .815). H2 was also supported. Perceived ESG practices were positively associated with brand loyalty (B = .618, standardized beta = .850, t = 31.472, p < .001), explaining 72.2% of the variance (R^2 = .722). The unusually large, standardized effects and explained variances warrant careful assessment of construct distinctiveness and common method variance in the re-estimated measurement model.

Table 4. Direct effects of perceived ESG practices

Dependent variable	B	Std. beta	t	p	R^2
Consumer behavior	.674	.903	40.973	< .001	.815
Brand loyalty	.618	.850	31.472	< .001	.722

4.5. Mediating role of digital transformation

The results supported H3. Perceived ESG practices were positively associated with digital transformation (B = .518, standardized beta = .674, p < .001), and digital transformation was positively associated with consumer behavior (B = .241, standardized beta = .248, p < .001). The direct ESG–consumer behavior path remained significant after including the mediator (B = .550, standardized beta = .736, p < .001). The standardized indirect effect was .167 (p < .001), indicating partial mediation. Thus, perceived ESG practices are associated with consumer behavior both directly and through digitally enabled transparency, communication, integration, and customer experience.

4.6. Mediating role of sustainable performance

The results supported H4. Perceived ESG practices were positively associated with sustainable performance (B = .649, standardized beta = .857, p < .001), and sustainable performance was positively associated with brand loyalty (B = .727, standardized beta = .756, p < .001). The direct ESG–brand loyalty path remained significant in the mediated model (B = .147, standardized beta = .202, p < .001). The standardized indirect effect was .648 (p < .001), indicating substantial partial mediation. The result suggests that consumers' loyalty depends strongly on whether ESG commitments are perceived to produce credible sustainability outcomes.

Table 5. Mediation analysis

Path	B	Std. beta	SE	CR/t	p
Perceived ESG practices → Digital transformation	.518	.674	.029	17.836	< .001

Digital transformation → Consumer behavior	.241	.248	.026	9.202	< .001
Perceived ESG practices → Consumer behavior (direct with mediator)	.550	.736	.020	27.309	< .001
Indirect: ESG → Digital transformation → Consumer behavior	—	.167	—	—	< .001
Perceived ESG practices → Sustainable performance	.649	.857	.020	32.488	< .001
Sustainable performance → Brand loyalty	.727	.756	.034	21.515	< .001
Perceived ESG practices → Brand loyalty (direct with mediator)	.147	.202	.026	5.736	< .001
Indirect: ESG → Sustainable performance → Brand loyalty	—	.648	—	—	< .001

4.7. Exploratory analysis of ESG dimensions

Environmental and governance factors were significant predictors of consumer behavior, whereas social factors were not significant after controlling for the other dimensions. The same pattern emerged for brand loyalty. Environmental factors produced the largest coefficients in both models. The non-significant social result should not be interpreted as evidence that social responsibility is unimportant; rather, its unique statistical contribution was not distinguishable from zero after accounting for overlap with environmental and governance perceptions.

Table 6. Exploratory effects of ESG subdimensions

Dependent variable	Predictor	B	Std. beta	t	p
Consumer behavior	Environmental factors	.323	.430	5.249	< .001
Consumer behavior	Social factors	.066	.087	1.000	.318
Consumer behavior	Governance factors	.281	.401	5.017	< .001
Brand loyalty	Environmental factors	.565	.771	7.916	< .001
Brand loyalty	Social factors	.127	−.173	1.669	.096
Brand loyalty	Governance factors	.182	.267	2.804	.005

5. Discussion

The study examined whether perceived ESG practices influence consumer behavior and brand loyalty in Qatar and whether digital transformation and sustainable performance explain these relationships. All four hypotheses were supported in the available path models. The results indicate that ESG functions as a market-facing construct rather than solely a disclosure, investment, or compliance construct. Consumers appear to use perceived ESG practices when evaluating firms and deciding whether to maintain brand relationships.

The strong positive association between perceived ESG practices and consumer behavior supports stakeholder theory. Consumers, as economically consequential stakeholders, appear to respond favorably when firms are perceived to protect the environment, attend to social responsibilities, and operate through accountable governance. The result is consistent with Hasan et al. (2024), who found positive ESG effects on customer behavior, and with Boufounou et al. (2023), who linked ESG considerations with customer choice. From a signaling perspective, the aggregate ESG construct may act as a heuristic for quality, responsibility, and long-term orientation when consumers cannot directly inspect internal practices.

At the same time, the magnitude of the ESG–consumer behavior effect is considerably larger than typically observed in behavioral research. Two mechanisms may be operating. Substantively, ESG may be highly salient among a digitally active sample in a market where sustainability and modernization are increasingly visible. Methodologically, common source measurement, broad item content, or insufficient construct separation may inflate associations. The result should therefore be interpreted as a strong association within the dataset, not as definitive causal evidence, until the measurement model and CMB diagnostics are completed.

The positive relationship between perceived ESG practices and brand loyalty extends research connecting sustainability responsibility with trust, attachment, and durable brand relationships. Yuan et al. (2024) emphasize that CSR-related perceptions shape customer attitudes and loyalty, while Puriwat and Tripopsakul (2023) show that ESG can foster brand love and loyalty across consumer segments. In stakeholder terms, loyalty represents a reciprocal response to perceived responsible conduct. In signaling terms, repeated, coherent ESG cues reduce uncertainty about future firm behavior and make continued patronage less risky.

Digital transformation partially mediated the ESG–consumer behavior relationship. This finding clarifies the mechanism through which ESG becomes actionable. Digital transformation can reduce information and interaction costs by making sustainability data accessible, enabling traceability, integrating service processes, and supporting responsive communication. The finding aligns with research showing that digitalization improves ESG outcomes through information processing, internal controls, and innovation (Lu et al., 2023; Wu & Li, 2023), but it extends that literature into the consumer interface. Unlike studies that treat digital transformation as a moderator, the present model suggests a transmission process: stronger ESG perceptions coincide with stronger perceptions of digital implementation, which then influence consumer behavior.

Sustainable performance produced an even larger indirect pathway to brand loyalty. This is theoretically important because it separates communication from proof. Consumers may notice ESG through digital channels, but loyalty is more strongly tied to perceived delivery—resource efficiency, environmental improvement, sustainable innovation, and balanced value creation. Sustainable performance therefore operates as a credibility mechanism in signaling theory and

as a stakeholder-value mechanism in stakeholder theory. The result also explains why ESG rhetoric alone is unlikely to sustain loyalty: repeated patronage requires evidence that the firm's conduct is consistent with its claims.

The subdimension analysis adds nuance and responds to divergent findings in prior research. Environmental and governance perceptions predicted both outcomes, whereas social perceptions did not have a significant unique effect. This pattern differs from Koh et al. (2022), where social and governance dimensions were prominent and environmental effects were weaker, but is closer to Hasan et al. (2024), who reported strong environmental effects. Context, item wording, consumer awareness, industry composition, and the visibility of practices may explain the difference. Environmental outcomes such as energy use, waste, emissions, and resource efficiency can be communicated through concrete metrics. Governance cues such as transparency, complaint handling, data protection, and ethical controls can directly reduce consumer risk. Social initiatives may be more diffuse, less visible, or statistically absorbed by correlated ESG dimensions unless firms connect them clearly to employees, communities, accessibility, inclusion, or customer welfare.

The Qatari context may also shape salience. The combination of digital adoption, institutional modernization, and sustainability-focused development can make environmental and governance signals especially legible. However, the results should not be treated as uniquely Qatari without comparative evidence. Their broader contribution is analytical: in high-income, digitally advanced emerging economies, ESG may influence consumers most when it is visible through digital interfaces and validated by perceived performance. Replication across Gulf Cooperation Council markets would test this proposed boundary condition.

6. Theoretical Contributions

First, the study extends ESG research from firm-level financial outcomes to consumer-facing behavioral outcomes. It treats perceived ESG as a market signal incorporated into consumer judgment rather than as an audited score or investor metric. This distinction is important because objective ESG ratings and consumer perceptions need not converge.

Second, the study integrates stakeholder theory, signaling theory, and S–O–R into a dual-mechanism model. Digital transformation explains how ESG signals become visible and usable in the customer journey, while sustainable performance explains how ESG signals become credible enough to support loyalty. The two mediators therefore represent different theoretical functions: accessibility and evidence.

Third, the analysis identifies context-dependent heterogeneity across ESG pillars. The environmental and governance dimensions had significant unique effects, while the social dimension did not. This challenges undifferentiated assumptions that all ESG pillars influence consumers equally and encourages future research to model visibility, credibility, consumer relevance, and cultural interpretation as boundary conditions.

Fourth, the study contributes to marketing analytics by demonstrating that direct effects alone conceal important transmission mechanisms. The finding that sustainable performance carries a large share of the ESG–loyalty association suggests that managers and researchers should distinguish exposure to ESG communication from perceived implementation quality and outcome credibility.

7. Managerial and Regulatory Implications

Managers should operationalize ESG as a customer-facing management system rather than a stand-alone report. A practical governance structure is to assign executive ownership, define pillar-specific objectives, map stakeholders, establish data owners, document controls, set targets, and publish progress at regular intervals. Disclosures should be aligned with recognized frameworks such as the GRI Standards and, where financially material, IFRS S1 and IFRS S2. Environmental management can be supported by ISO 14001 and greenhouse-gas accounting by the GHG Protocol; compliance and anti-bribery controls can be structured through ISO 37301 and ISO 37001; stakeholder engagement can draw on AA1000 principles; and digital trust should be supported by ISO/IEC 27001 and accessible design standards such as WCAG 2.2.

The digital-transformation mediation result supports five concrete practices. Firms should create a searchable ESG evidence portal linked to product and service pages; provide traceable metrics with definitions, baselines, targets, and update dates; integrate sustainability information into mobile applications, e-commerce, invoices, and service journeys; use digital channels for structured stakeholder feedback and grievance handling; and apply independent assurance or verifiable data controls to high-risk claims. Artificial intelligence may improve personalization and responsiveness, but automated ESG communication should be governed by human oversight, source traceability, privacy controls, and a clear process for correcting errors.

The sustainable-performance mediation result requires managers to prioritize outcomes over campaigns. Environmental claims should be linked to quantified reductions in energy, emissions, waste, water use, or material intensity. Social claims should identify beneficiaries, coverage, safeguards, and measured outcomes rather than only expenditure. Governance claims should disclose board oversight, ethics mechanisms, complaint resolution, data protection, and remediation. Managers should use a claims register that links every public sustainability statement to an accountable owner, evidence source, review date, and approval record. This procedure reduces greenwashing risk and makes performance auditable.

Because the social dimension was not significant in the multivariate models, firms should improve the specificity and consumer relevance of social communication. Generic philanthropy should be replaced or supplemented by evidence on employee welfare, accessibility, inclusion, community outcomes, responsible sourcing, customer protection, and human-rights due diligence. The purpose is not to deprioritize social responsibility but to make its mechanisms and outcomes observable.

Regulators and market institutions can support credible ESG–consumer relationships through standardized disclosure templates, minimum definitions for environmental and social claims, proportionate assurance requirements, public correction mechanisms, and enforcement against misleading sustainability marketing. A digital registry of material ESG claims and assurance statements would improve comparability. Regulators should also require clear complaint and redress routes when consumers rely on sustainability claims in purchasing decisions.

8. Limitations and Future Research

The study has several limitations. First, its cross-sectional design identifies associations but cannot establish temporal order or causality. Longitudinal and experimental studies should test whether exposure to verified ESG information changes actual behavior over time. Second, all focal variables were self-reported in one questionnaire, creating potential common method bias. Procedural controls and statistical diagnostics must be documented, and future research should combine consumer surveys with behavioral, transactional, or firm-level data.

Third, the study measures perceived ESG rather than audited ESG performance. This is appropriate for consumer-response theory but creates a perception–performance gap. Future studies should link consumer perceptions to company disclosures, assurance reports, environmental indicators, complaint data, or independent ratings. Fourth, the dataset does not identify a representative sample of firms or industries. Sector-specific studies could compare high-contact services, banking, retail, telecommunications, transport, hospitality, and energy.

Fifth, the one-country design limits statistical generalization. Comparative studies across Qatar, Saudi Arabia, the United Arab Emirates, Kuwait, Bahrain, and Oman could test the roles of institutional trust, national sustainability policy, digital maturity, consumer values, and expatriate status. Sixth, the very high explained variance and scale reliabilities require careful measurement-model assessment to rule out item redundancy, construct overlap, and common source inflation.

Future research should also investigate moderators such as ESG skepticism, perceived authenticity, product involvement, generational cohort, national culture, digital literacy, and price sensitivity. Sequential mediation models may test whether digital transparency increases credibility, which then improves trust and loyalty. Qualitative research can examine why social ESG signals appear less salient and which forms of evidence consumers regard as credible.

9. Conclusion

This study shows that perceived ESG practices are strongly associated with consumer behavior and brand loyalty in Qatar. It also identifies two distinct pathways. Digital transformation partially transmits the ESG effect to consumer behavior by making responsibility visible, accessible, and integrated into customer interactions. Sustainable performance partially transmits the ESG effect to brand loyalty by making responsibility credible through perceived results. Environmental and governance perceptions had significant unique effects, whereas the social dimension did not after the other pillars were controlled. The central conclusion is that ESG creates consumer value when firms convert commitments into digitally observable experiences and demonstrable sustainability performance. The evidence broadens consumer-oriented ESG research in the Gulf, while the unresolved measurement-model and common-method diagnostics must be completed from the raw dataset before the manuscript can meet high-quality journal standards.

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Appendix A. Questionnaire and Construct Map

The reviewers requested the complete questionnaire. The anonymized manuscript supplied for revision reports only the number and thematic coverage of the items; it does not contain the verbatim administered instrument. To protect research integrity, the table below does not invent missing item wording. The authors must paste the exact questionnaire, including screening questions, instructions, response anchors, construct items, demographic questions, language versions, and consent text, before submission.

Item codes	Domain	Number	Required content
ESG-E1 to ESG-E6	Environmental practices	6	Insert exact administered wording and source
ESG-S1 to ESG-S6	Social practices	6	Insert exact administered wording and source
ESG-G1 to ESG-G6	Governance practices	6	Insert exact administered wording and source
CB1 to CB21	Consumer behavior	21	Insert exact administered wording and source
BL1 to BL7	Brand loyalty	7	Insert exact administered wording and source
DT1 to DT6	Digital transformation	6	Insert exact administered wording and source
SP1 to SP6	Sustainable performance	6	Insert exact administered wording and source

Appendix B. Required Measurement-Model and Bias Diagnostics

Assessment	Required output	Decision criterion
Indicator reliability	Standardized loading for every item	Preferably ≥ .70; justify retained items below threshold
Internal consistency	Cronbach's alpha, rho_A, composite reliability	Generally .70–.95
Convergent validity	Average variance extracted (AVE)	≥ .50
Collinearity	Indicator and/or construct VIF	Preferably < 3.3; commonly < 5
Fornell–Larcker	Square root of AVE and interconstruct correlations	Diagonal exceeds corresponding correlations
HTMT	All construct-pair HTMT ratios and bootstrap CIs	< .85 or < .90; CI should not include 1
Common method bias	First-factor variance plus full-collinearity VIF or common latent factor	Report method and thresholds
Mediation	Bootstrapped indirect effect, SE, 95% CI, p	At least 5,000 resamples; CI excludes zero
Model fit (CB-SEM)	χ^2/df, CFI, TLI, RMSEA with CI, SRMR	Report and justify accepted thresholds

Appendix C. Hypothesis Decision Summary

Hypothesis	Relationship	Decision	Standardized effect	p
H1	Perceived ESG practices → consumer behavior	Supported	.903	< .001
H2	Perceived ESG practices → brand loyalty	Supported	.850	< .001
H3	ESG → digital transformation → consumer behavior	Supported; partial mediation	.167 indirect	< .001
H4	ESG → sustainable performance → brand loyalty	Supported; partial mediation	.648 indirect	< .001

Declaration

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