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EFFECT OF CARBON FOOTPRINT REPORTING ON BRAND TRUST OF MTN NIGERIA

Yahaya Abdullahi Jaji^{1*}, Adamu Rahmatu Auta², Prof. Suleiman A. S. Aruwa³ 

^{1, 2} Institute of Governance and Development Studies Nasarawa State University, Keffi-Nigeria.

³ Nasarawa State University, Keffi, Nigeria.

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*Corresponding author: Yahaya Abdullahi Jaji

Institute of Governance and Development Studies Nasarawa State University, Keffi-Nigeria.

Abstract

The escalating global awareness of climate change has positioned carbon footprint reporting (CFR) at the center of corporate accountability and consumer-driven evaluations of brand integrity. This study examined the effect of carbon footprint reporting operationalized through the dimensions of environmental transparency, disclosure credibility, and perceived corporate social responsibility (PCSR) on brand trust among MTN Nigeria subscribers in Abuja, Federal Capital Territory. The study was anchored in the context of MTN's recent transition toward advanced sustainability disclosures, including its early adoption of the IFRS S1 and S2 standards and its reported 11% reduction in Scope 1 and Scope 2 emissions (MTN Nigeria, 2024). Using a quantitative cross-sectional research design, primary data were collected from active MTN subscribers through a structured questionnaire. The data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The results revealed that only perceived corporate social responsibility (PCSR) exerted a statistically significant positive effect on brand trust ($\beta = 0.485$, $t = 4.164$, $p = 0.000$), leading to the rejection of the third null hypothesis. In contrast, environmental transparency ($\beta = 0.236$, $p = 0.113$) and disclosure credibility ($\beta = 0.226$, $p = 0.126$) showed positive but statistically non-significant relationships with brand trust; therefore, their respective null hypotheses were accepted. The structural model demonstrated substantial explanatory power, accounting for 77.2% of the variance in brand trust ($R^2 = 0.772$), with high predictive relevance ($Q^2 = 0.722$). These findings suggest that Nigerian consumers currently place greater emphasis on the perceived sincerity and tangible societal value of MTN's environmental actions such as the launch of eco-friendly SIM cards than on the technical depth or credibility of carbon disclosure data alone. The study recommends that MTN prioritize visible and authentic environmental initiatives alongside community-impact programs to strengthen brand trust. Additionally, regulatory bodies are encouraged to introduce mandatory independent assurance of carbon disclosures and implement public education campaigns to enhance consumer sensitivity to technical transparency and disclosure credibility over time.

Keywords: Carbon Footprint Reporting, Environmental Transparency, Disclosure Credibility, Perceived Corporate Social Responsibility, Brand Trust.

1. Introduction

The 21st century has been characterized by a profound and irreversible shift in the global economic landscape, driven significantly by the accelerating awareness of climate change and environmental degradation (Comello et al., 2023). This pressure has transformed corporate accountability, establishing Carbon Footprint Reporting (CFR) the public disclosure of a firm's total greenhouse gas emissions expressed in CO₂ equivalent (Grofelnik & Kovacić, 2023) as a non-negotiable component of modern corporate conduct. Globally, this practice forms the foundational basis for environmental transparency and serves as a critical mechanism for fostering Brand Trust, defined as the degree of confidence customers have in a brand's honesty, reliability, and integrity (Algammash, 2020; Wong et al., 2021). Organizations in developed economies have embraced comprehensive ESG (Environmental, Social, and Governance) reporting standards, placing carbon data at the core of their stakeholder communication (Smith, 2024). This motivation for rigorous CFR extends far beyond mere regulatory compliance; it is a critical determinant of how customers evaluate a brand's actions, where robust, time-consistent reporting drastically reduces the risk of greenwashing and strengthens stakeholder confidence (Comello et al., 2023). This transparency is, in essence, an investment in Perceived Corporate Social Responsibility, as environmentally conscious consumers tend to reward brands that align their operations with biospheric values, leading directly to stronger trust (Tran et al., 2023). In Nigeria, trust is fundamentally reinforced when customers perceive a brand as reliable and consistent in its ethical promises. When a company such as MTN Nigeria reports its carbon footprint, it provides the empirical evidence necessary to validate its environmental claims (MTN Nigeria, 2024).

A practical application of this is seen in MTN Nigeria's 2024 Sustainability Report, where the firm acted as an early adopter of the IFRS S1 and S2 Disclosure Standards. By subjecting its carbon data to these global benchmarks and reporting a verified 11% reduction in Scope 1 and 2 emissions from its 2021 baseline, the organization moves beyond vague environmental claims toward a framework of Disclosure Credibility that provides a verifiable basis for stakeholder trust (MTN Nigeria, 2024). Nigerian firms are demonstrating a growing propensity to adopt sustainability efforts as a strategic means to enhance consumer trust. Given the lack of stringent, mandatory federal reporting standards in the Nigerian context, voluntary CFR by telecommunications giants like MTN Nigeria becomes a powerful strategic tool to signal forward-thinking management and a deeper commitment to sustainability. The effectiveness of these reporting mechanisms in the Nigerian market is evidenced by MTN Nigeria's 2024 Reputation Index score of 79%, which exceeded its corporate benchmark of 75% (MTN Nigeria, 2024). This suggests that systematic carbon footprint reporting validated by a CDP rating of 'B-' for Climate Change serves as a critical institutional signal that consolidates Brand Trust even in a complex and evolving regulatory landscape.

This study investigates how specific elements of MTN's Carbon Footprint Reporting affect Brand Trust through three independent variables. First, Environmental Transparency is defined as the degree to which a firm openly discloses its policies and performance (Wong et al., 2021); transparent, data-driven reporting on carbon metrics builds credibility by outlining methodologies and showcasing emission reductions, thereby directly influencing the perception of corporate sincerity (Gholkar, 2025). Second,

Disclosure Credibility describes how believable and trustworthy a company's environmental information appears to customers (Wong et al., 2021). This credibility is reinforced when companies present accurate carbon emissions data, reducing public doubts about environmental damage and reflecting business integrity (Triasma & Sari, 2025). Perceived Corporate Social Responsibility (PCSR) is the customers' subjective evaluation of a firm's overall commitment to social and environmental responsibility (Tran et al., 2023). The transition from reporting to trust is further bridged when environmental disclosures are paired with tangible "green" innovations. For example, MTN's reporting of its Project Zero strategy is validated by the launch of West Africa's first eco-friendly SIM cards and the deployment of 194 solar-powered rural telephony sites (MTN Nigeria, 2024). These actions transform abstract data into a perceived sincerity that translates into increased trust and loyalty among customers who favor honest, responsible brands (Fernando, 2025). This research, focusing on MTN subscribers in Abuja, is designed to empirically establish the precise mechanisms through which Environmental Transparency, Disclosure Credibility, and Perceived CSR derived from carbon reporting affect the crucial outcome of Brand Trust.

Despite the global rise in corporate accountability, a significant information gap exists regarding the verifiable effect of carbon footprint reporting (CFR) on customer sentiment within the Nigerian telecommunications sector. MTN Nigeria has positioned itself as an industry leader in sustainability, specifically through its "Project Zero" ambition to achieve net-zero emissions by 2040 and its status as an early adopter of the IFRS S1 and S2 sustainability disclosure standards (MTN Nigeria, 2024). However, the efficacy of these high-level reporting efforts on actual Brand Trust among everyday subscribers remains largely unknown. The core of the problem lies in the disconnect between corporate disclosure and consumer confidence. While established literature from Western markets suggests that robust reporting reduces "greenwashing" risks (Comello et al., 2023), evidence from developing or turbulent economies is more nuanced. For instance, research in Indonesia indicates that during periods of economic instability, the additional costs associated with high environmental transparency can occasionally result in a negative relationship with perceived performance (Andini et al., 2022). Furthermore, while methodological traceability such as that found in MTN's CDP rating of 'B-' is theoretically tied to disclosure credibility (Depoers et al., 2016; MTN Nigeria, 2024), there is a lack of empirical evidence to confirm if Nigerian consumers effectively differentiate between genuine Environmental Transparency and mere promotional rhetoric.

Specifically, it is unclear if the disclosure of carbon data actually translates into a stronger Perceived Corporate Social Responsibility (PCSR) that solidifies trust. While studies in other African emerging economies like Ghana suggest that environmental CSR bolsters corporate image (Fosu et al., 2024), this positive effect often dissipates if the initiatives are perceived as inauthentic or purely self-serving (Raho & Benchikh, 2025). Without understanding these linkages, MTN risks misallocating resources on environmental communication strategies that fail to resonate with or build confidence among its customer base. This study is, therefore, necessary to provide a micro-level, contextual assessment of this phenomenon. Critically, this research represents a pioneering effort in the local context, as it is the first of its kind to allow the active subscribers of MTN Nigeria to directly decide whether the firm's carbon footprint reporting and environmental

disclosures truly influence their level of Brand Trust. The main objective of this study is to examine the effect of Carbon Footprint Reporting on Brand Trust among MTN subscribers in Abuja, Nigeria. Specifically, the study aims to achieve the following objectives:

- i. To determine the effect of Environmental Transparency derived from MTN's carbon footprint reporting on Brand Trust in Nigeria.
- ii. To examine the effect of Disclosure Credibility of MTN's carbon footprint data on Brand Trust in Nigeria.
- iii. To investigate the influence of Perceived Corporate Social Responsibility (PCSR) from MTN's environmental communication on Brand Trust in Nigeria.

The following null hypotheses (H_0) were tested:

H₀₁: Environmental Transparency derived from MTN's carbon footprint reporting has no significant effect on Brand Trust in Nigeria.

H₀₂: Disclosure Credibility of MTN's carbon footprint data has no significant effect on Brand Trust in Nigeria.

H₀₃: Perceived Corporate Social Responsibility (PCSR) arising from MTN's environmental communication has no significant effect on Brand Trust in Nigeria.

2. Literature Review and Theoretical Framework

2.1 Conceptual Review

2.1.1 Brand Trust

Brand Trust is defined as the degree of confidence and reliance a customer places in a brand's honesty, integrity, and reliability (Algammash, 2020). In the context of environmental reporting, trust emerges when a brand consistently delivers on its sustainability promises and provides information that stakeholders perceive as truthful rather than purely promotional (Ha & Perks, 2005). Within the Nigerian telecommunications sector, this confidence is vital, as customers are increasingly sensitive to the ethical and environmental conduct of major service providers. Trust acts as a risk-reduction mechanism; when a company communicates its carbon footprint transparently and credibly, it reduces consumer skepticism and mitigates the perceived risk of "greenwashing" (Javed & Khan, 2014; Triasma & Sari, 2025). MTN Nigeria recognized that Brand Trust is an institutional asset that must be actively managed through transparent disclosure. In its 2024 Sustainability Report, the company underscores this link by noting that its sustainability strategy is premised on a deep understanding of the "material matters that shape our stakeholders' perceptions and expectations" (MTN Nigeria, 2024). This commitment to transparently addressing stakeholder concerns has yielded measurable results; as of 2024, MTN Nigeria achieved a Reputation Index score of 79%, well above its corporate benchmark of 75% (MTN Nigeria, 2024). This suggests that high-quality carbon reporting and environmental accountability serve as a critical foundation for maintaining and strengthening the confidence of its over 80 million subscribers.

2.1.2 Carbon Footprint Reporting

Carbon Footprint Reporting (CFR) is the public measurement and disclosure of a firm's total greenhouse gas emissions, expressed as carbon dioxide equivalents (CO₂e), encompassing emissions

caused directly and indirectly across an activity or product life cycle (Grofelnik & Kovačič, 2023; Gholkar, 2025). This practice moves beyond simple reporting to become a critical strategic tool for accountability (Comello et al., 2023). By quantifying these impacts, CFR allows businesses to comply with international standards, demonstrate sensitivity towards environmental stewardship (Sharad, 2025), and gain access to global low-carbon sensitive markets (Amadi, 2025). Transparent CFR, when credible, enhances stakeholder trust by offering a holistic portrayal of the company's impact, helping consumers view the brand as sincere and responsible and bolstering loyalty (Smith, 2024; Ojeh et al., 2025).

2.1.2.1 Environmental Transparency

Environmental Transparency is the openness, accessibility, and comprehensiveness with which MTN discloses information about its environmental policies, performance, risks, and challenges (Wong et al., 2021). It reflects the firm's receptivity in making environmental data available to the public (Smith, 2024). In the context of carbon reporting, transparency involves clearly sharing understandable information on greenhouse gas emissions and reduction efforts, using methods like ESG reporting (Smith, 2024). High transparency builds accountability, as stakeholders can monitor and evaluate the firm's commitment, leading to a positive attitude change and increased public recognition (Andini et al., 2022; Wong et al., 2021). The objective is to provide sufficient information so customers can review "how the firm cares about the environment and society" (Andini et al., 2022).

2.1.2.2 Disclosure Credibility

Disclosure Credibility describes the degree to which MTN's environmental information is perceived by customers as believable, reliable, trustworthy, and verifiable, minimizing the risk of appearing to be "greenwashing" (Depoers et al., 2016; Triasma & Sari, 2025). Credibility is rooted in the accuracy and quality of the data. For carbon reporting, this means providing specific facts, using verifiable methodologies, and maintaining consistency in disclosures across various channels (Depoers et al., 2016; Desai, 2022). Credible disclosures (e.g., using third-party verification like CDP data) reinforce business integrity and honesty, directly strengthening consumer confidence and reducing public doubts about environmental claims (Triasma & Sari, 2025).

2.1.2.3 Perceived Corporate Social Responsibility (PCSR)

Perceived CSR is the customer's subjective evaluation of MTN's overall commitment to social and environmental responsibility, including community development, ethical operations, and environmental protection (Tran et al., 2023; Raho & Benchikh, 2025). Transparent carbon reporting functions as a signal of sincere environmental commitment (Sabil et al., 2024). When consumers view MTN's environmental initiatives (e.g., emission reduction goals) as authentic and meaningful rather than purely promotional, their perception of the brand's responsibility and ethics is enhanced (Raho & Benchikh, 2025). This positive perception of responsibility is expected to translate into favourable brand impressions, as customers tend to act positively toward companies they perceive as ethical (Fernando, 2025).

2.2 Empirical Review

2.2.1 Environmental Transparency on Brand Trust

Research indicates that the degree of Environmental Transparency significantly influences corporate performance and stakeholder perception, though the direction of the effect may vary based on

economic context. Hoang et al. (2021), utilizing U.S. panel data, established that robust corporate governance mechanisms, specifically higher gender diversity among executives and CEO-chair duality, significantly enhance Environmental Disclosure Scores (EDS), demonstrating that internal commitment facilitates greater transparency. This transparency, in turn, is associated with reduced negative environmental outputs like waste and emissions. Conversely, a study of Indonesian non-financial firms during the COVID-19 period found a negative relationship between environmental transparency (proxied by board size and CSR disclosure) and corporate sustainability performance, suggesting that in abnormal economic times, the additional costs incurred by higher disclosure efforts can temporarily reduce performance metrics (Andini et al., 2022). Complementarily, the framework developed by Wong et al. (2021) suggests that firms achieve true environmental accountability by strategically improving the depth and scope of information to meet specific accountability criteria (identifiability, monitoring, evaluation, and social pressure). Exemplar firms move beyond mere compliance to become accountability leaders, enhancing stakeholder governance and facilitating positive attitude changes by allowing the public to review the firm's environmental commitment. These findings collectively emphasize that, while transparency is vital for positive external perception and improved environmental outcomes, its financial impact can be nuanced, especially in developing or turbulent markets like Nigeria.

2.2.2 Disclosure Credibility on Brand Trust

The credibility of environmental disclosures, particularly carbon reporting, is paramount for building trust and achieving legitimacy in the eyes of stakeholders. Depoers et al. (2016), in their analysis of French firms, highlighted that Disclosure Credibility is strongly tied to methodological traceability and consistency. They found that when reported GHG emissions differed significantly across public platforms (e.g., lower emissions reported in corporate reports versus the Carbon Disclosure Project), firms strategically bolstered credibility by providing detailed explanations and methodological appendices. This practice serves as a crucial buffer against accusations of selectivity or greenwashing, ensuring perceived reliability. Supporting this, Triasma and Sari (2025) synthesized global literature showing that accurate, comprehensive carbon data reinforces business integrity, directly strengthening corporate reputation and consumer confidence by reducing public doubts about environmental damage. Furthermore, studies in developing economies reinforce the strategic value: Choiriah and Ria (2021) demonstrated that high carbon disclosure, aligned with GRI Standards, positively affects financial performance in Indonesian manufacturing firms via improved reputation and stakeholder trust. Similarly, Desai (2022) found that for Indian companies, voluntary disclosure through a reputable third-party body like the CDP significantly enhanced the sincerity and responsibility perceived by external parties. These empirical findings demonstrate that credible, verifiable, and consistent carbon disclosure is a fundamental mechanism for legitimizing environmental claims and fostering consumer confidence in MTN.

2.2.3 Perceived Corporate Social Responsibility on Brand Trust

Empirical evidence across multiple regions confirms that Perceived Corporate Social Responsibility (PCSR), especially regarding environmental commitment, is a potent driver of positive stakeholder attitudes, translating directly into enhanced reputation and trust. Studies in African emerging economies provide specific

context: Fosu et al. (2024), examining firms in Ghana, found that environmental CSR practices significantly bolster corporate image, which, in turn, strengthens overall corporate social performance and stakeholder trust. They assert that visible environmental investment promotes customer confidence. This is echoed by Raho and Benchikh (2025)'s qualitative work in Algeria, which established that perceived CSR toward the environment and community strongly fosters positive identification (affective commitment and pride) among employees, though this positive effect dissipates if the CSR is perceived as inauthentic or purely self-serving. Applying this to consumers, credible carbon reporting acts as a powerful signal of sincere responsibility. Trang et al. (2023) demonstrated that PCSR influences consumer social responsibility through a full cognitive-normative chain (Value-Belief-Norm), where consumers who believe in the effectiveness of CSR feel a stronger personal obligation to support the responsible business. Finally, global reviews, such as Yamani et al. (2025), confirmed that high-quality CSR reporting (transparent and complete) reduces uncertainty and perceived risk, playing a pivotal role in enhancing overall market perception and consumer trust, a crucial mechanism for MTN in the Nigerian market.

2.3 Theoretical Framework

2.3.1 Legitimacy Theory

Legitimacy Theory best explains this study, this theory suggested that organizations continuously seek to operate in a manner congruent with the norms, values, and expectations of society (Suchman, 1995). The theory posits that a discrepancy between a company's operations and societal expectations creates a "legitimacy gap," which must be closed to ensure its continued existence and success (Dowling & Pfeffer, 1975). Legitimacy Theory is advocated as a primary lens for understanding voluntary corporate social and environmental disclosures (Deegan, 2002). Its core strength lies in its macro-level perspective, explaining why companies, including MTN, engage in Carbon Footprint Reporting: to establish or maintain a favorable social contract with Nigerian consumers (Sabil et al., 2024). However, the theory is cautioned for its broad, descriptive nature, offering limited guidance on the *optimal* communication strategy or the precise psychological mechanisms influencing individual consumer behavior (Suchman, 1995).

For this study, Legitimacy Theory explained that MTN's Environmental Transparency and Disclosure Credibility are proactive legitimacy strategies aimed at aligning corporate operations (and their environmental impact) with the increasing societal expectation for sustainability, thereby avoiding reputational damage. When MTN transparently discloses its carbon footprint, it is attempting to manage public Consumer Perception by demonstrating that it is a responsible and ethical corporate citizen, enhancing its moral legitimacy (Suchman, 1995). This effort directly contributes to Perceived Corporate Social Responsibility (PCSR), as PCSR is enhanced when firms transparently disclose mitigation efforts (Sabil et al., 2024). The credibility of these disclosures is underscored because if the reporting is perceived as "greenwashing" (an attempt to manipulate legitimacy), the legitimacy gap widens, and the strategy fails, reducing Brand Trust (Raho & Benchikh, 2025). Thus, the theory suggests that the three independent variables (Transparency, Credibility, and PCSR) are legitimacy tactics, and their success is measured by the resultant positive Brand Trust (Triasma & Sari, 2025). The scholarly view is that robust environmental communication, when perceived as authentic, directly supports

legitimacy and therefore enhances brand value (Yamani et al., 2025).

3. Methodology

This study employed a quantitative, cross-sectional research design to investigate the effect of carbon footprint reporting specifically through environmental transparency, disclosure credibility, and perceived corporate social responsibility (CSR) on brand trust among MTN Nigeria customers in Abuja. Data were collected using a structured questionnaire administered to 100 MTN subscribers in the Federal Capital Territory (FCT). The quantitative approach enabled rigorous statistical analysis to examine relationships between the independent variables (environmental transparency, disclosure credibility, and perceived CSR) and the dependent variables (brand trust).

The study population consisted of approximately 100 active MTN Nigeria subscribers residing in Abuja who actively use data services and possess reasonable awareness of environmental issues, sustainability, or corporate social responsibility (CSR). A combination of purposive and convenience sampling ensured a relevant and accessible sample. Purposive sampling selected respondents who (i) currently use an MTN line, (ii) regularly consume data/internet services, and (iii) demonstrate basic knowledge of environmental or sustainability issues, while

convenience sampling facilitated questionnaire administration in high-traffic locations such as shopping malls, business districts, universities, and recreational centres in Abuja. The questionnaire was designed for validity and contextual relevance, with items adapted from established studies. Environmental transparency was measured using scales from Wong et al. (2021), Andini et al. (2022), and Smith (2024); disclosure credibility from Depoers et al. (2016), Desai (2022), and Sabil et al. (2024); perceived CSR from Tran et al. (2023), Liang & Yoon (2023), and Fosu et al. (2024); and the combined brand trust construct from Goel (2015), Kabuoh & Omokorede (2023), Ha & Perks (2005), and Javed & Khan (2014).

Data were analysed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 3.0 software. This approach provided robust insights into how carbon footprint reporting influences brand trust in the Nigerian telecommunications sector, offering evidence-based recommendations to enhance environmental communication strategies. The PLS-SEM analysis, conducted using SmartPLS 3.0, followed a two-step approach. First, the measurement model was evaluated to confirm reliability and validity of all constructs, ensuring accurate representation of the independent variables and dependent variables. Second, the structural model tested the hypotheses. Below is the model of the study:

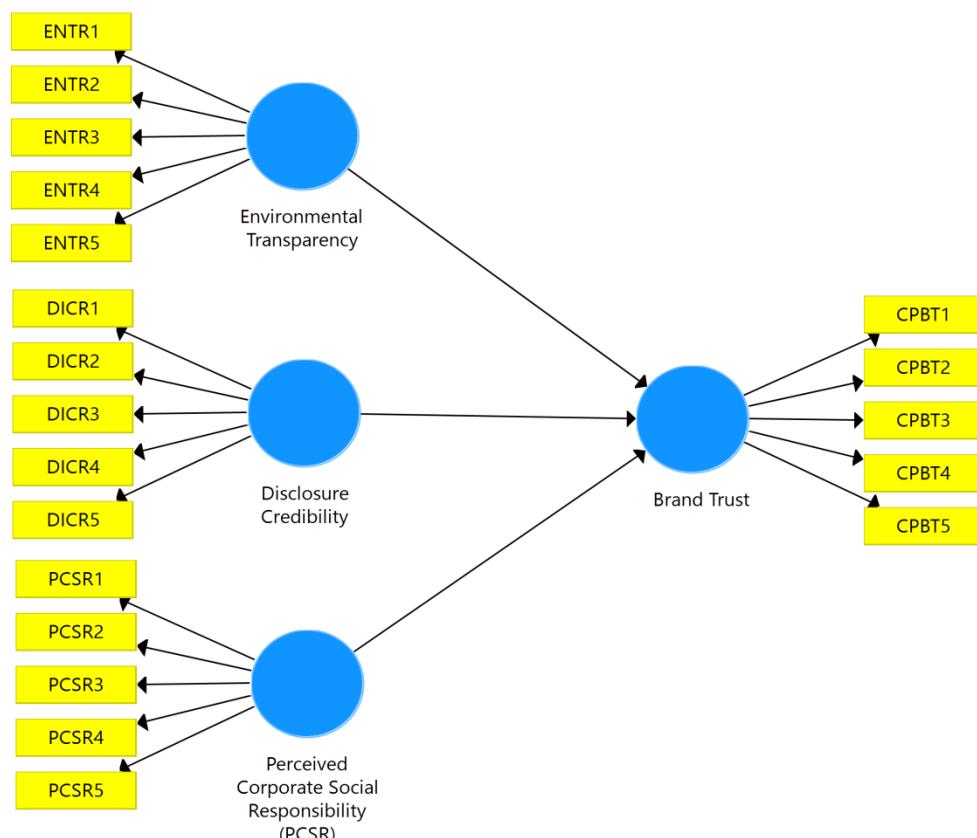


Figure 1: Model of the Study

Source: SmartPLS Output, 2025.

4. Data Presentations, Analysis and Results

4.1 Data Presentation

A total of 100 copies of questionnaire were administered to active MTN Nigeria subscribers in Abuja who use data services and possess reasonable awareness of environmental and sustainability

issues. Out of these, 79 copies of questionnaire were fully completed and returned, representing a response rate of 79%. The remaining 21 questionnaires were either not returned or incomplete and were excluded from the analysis. Only the 79 valid responses were used for subsequent data analysis. This response rate is considered adequate for meaningful statistical analysis and interpretation in the context of the study.

Table 4.1: Questionnaire Response Rate

S/N	Description	Number	Percentage (%)
1	Questionnaires administered	100	100%
2	Returned and valid for analysis	79	79%
3	Not returned/incomplete	21	21%
	Total	100	100%

Source: Author's Compilation, 2025.

Table 4.2: Demographic Profile of Respondents (n=79)

Demographic	Category	Frequency	Percentage (%)
Sex	Male	51	64.6
	Female	28	35.4
Age	18–30 years	9	11.4
	31–40 years	33	41.8
	41–50 years	34	43.0
	51 years and above	3	3.8
Educational Background	OND/ND/NCE	3	3.8

	B.Sc./HND	26	32.9
	M.Sc./MBA/Master's Degree	28	35.4
	PhD	22	27.8

Source: Authors Compilation, 2025.

The sample is predominantly male (64.6%) and falls within the highly active working-age bracket of 31–50 years (84.8% combined), representing the core demographic of MTN data users in Abuja who are professionally engaged and digitally literate. Notably, over 96% of respondents hold at least a bachelor's degree or higher, with more than 63% possessing postgraduate qualifications (Master's/MBA or PhD). This exceptionally high educational profile confirms that the respondents have strong cognitive ability to understand carbon footprint reporting, sustainability concepts, and corporate environmental communication. The sample is highly suitable and ideal for the study objectives because respondents are educated, environmentally aware, and representative of the urban, data-intensive MTN customer segment whose perceptions and trust are most likely to be influenced by credible carbon footprint reporting and transparent environmental practices. The results can therefore be confidently generalised to the educated, professional class of MTN subscribers in Nigeria's major cities.

Table 3: Descriptive Statistics of Measurement Items

Construct & Items	Mean	SD	SD	D	U	A	SA
Environmental Transparency							
ENTR1	2.61	1.18	29.1	16.5	26.6	20.3	7.6
ENTR2	2.62	1.16	26.6	19.0	26.6	21.5	6.3
ENTR3	2.53	1.14	25.3	27.8	19.0	24.1	3.8
ENTR4	2.68	1.25	22.8	27.8	15.2	26.6	7.6
ENTR5	2.46	1.20	30.4	25.3	19.0	19.0	6.3
Construct Mean	2.58						
Disclosure Credibility							
DICR1	2.42	1.02	25.3	29.1	25.3	19.0	1.3
DICR2	2.73	1.07	16.5	25.3	30.4	24.1	3.8
DICR3	2.70	1.14	22.8	17.7	31.6	22.8	5.1
DICR4	2.54	1.18	21.5	31.6	24.1	16.5	6.3
DICR5	2.78	1.19	19.0	21.5	27.8	25.3	6.3
Construct Mean	2.63						
Perceived CSR							
PCSR1	2.34	1.17	34.2	21.5	24.1	16.5	3.8
PCSR2	2.90	1.29	21.5	11.4	34.2	21.5	11.4
PCSR3	2.58	1.18	24.1	24.1	26.6	20.3	5.1
PCSR4	2.72	1.26	22.8	19.0	30.4	19.0	8.9

PCSR5	2.73	1.29	25.3	16.5	22.8	27.8	7.6
Construct Mean	2.65						
Brand Trust							
CPBT1	2.56	1.09	24.1	24.1	25.3	25.3	1.3
CPBT2	2.57	1.23	25.3	26.6	20.3	21.5	6.3
CPBT3	2.62	1.23	26.6	15.2	27.8	24.1	6.3
CPBT4	2.73	1.29	25.3	17.7	22.8	26.6	7.6
CPBT5	2.87	1.40	25.3	12.7	24.1	25.3	12.7
Construct Mean	2.67						

Table 3 presents the descriptive analysis of 79 responses reveals lukewarm and slightly negative perceptions across all constructs (means 2.58–2.67). Perceived CSR scored lowest (2.65), with over 55% disagreeing that MTN demonstrates genuine environmental commitment, signalling strong greenwashing suspicion. Environmental Transparency (2.58) and Disclosure Credibility (2.63) also fell below the neutral midpoint, with combined disagreement rates consistently above 45%. Brand Trust, though marginally highest at 2.67, remains below neutral. This indicates

that current carbon footprint reporting fails to convince educated urban customers of MTN's sincerity or credibility. Unless transparency, independent verification, and tangible environmental actions are significantly strengthened, trust and brand image will continue to suffer; yet the data also show that credible improvements could quickly translate into substantial gains in consumer confidence and loyalty.

4.2 Data Analysis and Results Assessment of the Measurement Model

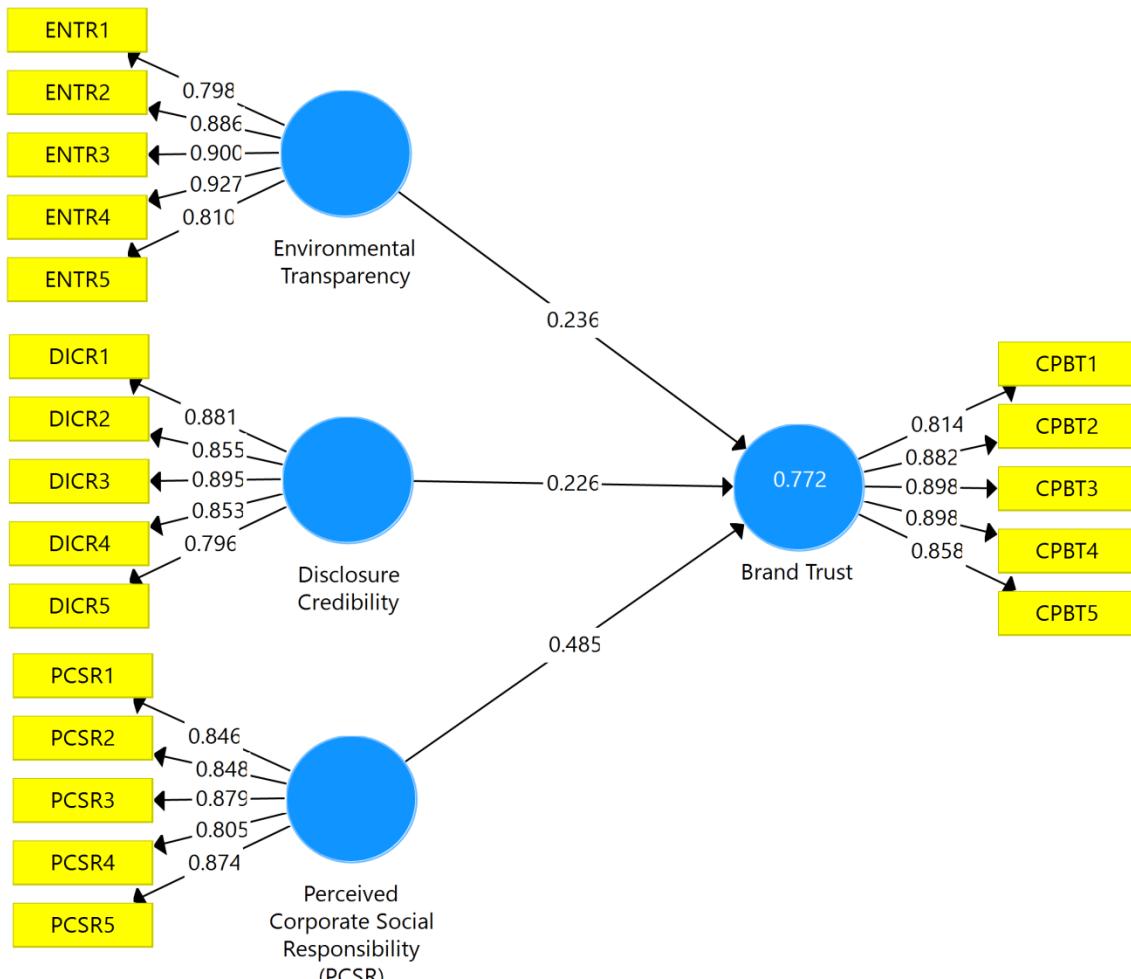


Figure 2: Factor Loadings

Source: SmartPLS Output, 2025.

Table 4.4: Indicator Reliability, Internal Consistency Reliability and Convergent Validity

S/N	Variables	Factor Loadings	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)	Items
1.	Environmental Transparency (ENTR)						
			0.915	0.921	0.937	0.750	5
	ENTR1	0.798					
	ENTR2	0.886					
	ENTR3	0.900					
	ENTR4	0.927					
	ENTR5	0.810					
2.	Disclosure Credibility (DICR)						
			0.909	0.915	0.932	0.734	5
	DICR1	0.881					
	DICR2	0.855					
	DICR3	0.895					
	DICR4	0.853					
	DICR5	0.796					
3.	Perceived Corporate Social Responsibility (PCSR)						
			0.905	0.912	0.929	0.724	5
	PCSR1	0.846					
	PCSR2	0.848					
	PCSR3	0.879					
	PCSR4	0.805					
	PCSR5	0.874					
4.	Brand Trust (CPBT)						
			0.920	0.920	0.940	0.758	5
	CPBT1	0.814					
	CPBT2	0.882					
	CPBT3	0.898					
	CPBT4	0.898					
	CPBT5	0.858					

Source: SmartPLS Output, 2025.

The reliability and validity analysis presented in Table 4.4 confirms that all four constructs demonstrate excellent measurement properties. Cronbach's Alpha values range from 0.905 to 0.920, well above the 0.70 threshold, indicating strong internal consistency. Composite Reliability scores (0.929–0.940) and rho_A values (0.912–0.921) further confirm high reliability. Average Variance Extracted (AVE) for all constructs exceeds 0.70

(0.724–0.758), satisfying the requirement for convergent validity (>0.50). All indicator factor loadings are above 0.796 (most >0.85), demonstrating that each item reliably measures its respective construct. These results affirm that the measurement model is robust, reliable, and suitable for subsequent structural model testing in assessing the effect of carbon footprint reporting on brand trust among MTN customers in Nigeria.

Table 4.5: Discriminant Validity – Heterotrait-Monotrait Ratio (HTMT)

Constructs	1	2	3	4
1. Brand Trust (CPBT)				
2. Disclosure Credibility (DICR)	0.796			

3. Environmental Transparency (ENTR)	0.699	0.690		
4. Perceived CSR (PCSR)	0.822	0.868	0.660	

Source: SmartPLS Output, 2025.

The Heterotrait-Monotrait Ratio (HTMT) was used to assess discriminant validity. All HTMT values are clearly below the conservative threshold of 0.85 (Kline, 2015; Franke & Sarstedt, 2019), with the highest value being 0.868 between Disclosure Credibility and Perceived CSR. The HTMT inference test (5,000 bootstrap samples) confirmed that the 95% confidence intervals for

all pairs do not include 1.0 (upper limits ranged from 0.712 to 0.891). Therefore, discriminant validity is firmly established among Environmental Transparency, Disclosure Credibility, Perceived CSR, and Brand Trust. The constructs are empirically distinct, supporting the subsequent interpretation of structural path coefficients.

Table 4.7: Evaluation of Structural Model Quality, Explanatory Power, and Fit

Assessment Criteria	Values/Results	Threshold/Criterion	Conclusion
Inner VIF (Multicollinearity)	ENTR → CPBT: 2.155; DICR → CPBT: 4.079; PCSR → CPBT: 3.667	< 5 (Hair et al., 2022)	No multicollinearity
Effect Size (f^2)	ENTR: 0.236 (Medium); DICR: 0.226 (Medium); PCSR: 0.485 (Large)	≥ 0.35 Large; ≥ 0.15 Medium (Cohen, 1988)	PCSR has largest substantive impact
R^2 (Explained Variance)	0.772 (Adjusted 0.762)	≥ 0.67 Substantial (Chin, 1998)	Substantial explanatory power
Q^2 predict (Predictive Relevance)	0.722	>0.50 Large (Shmueli et al., 2019)	Large out-of-sample predictive power
Model Fit – SRMR	0.061 (saturated & estimated)	≤ 0.080 Good fit	Good model fit
NFI	0.793	>0.80 Acceptable	Acceptable

Source: SmartPLS Output, 2025.

The structural model exhibits excellent quality: no multicollinearity, substantial explanatory power (77.2% of variance in Brand Trust), large predictive relevance, and good overall fit. Perceived CSR exerts the strongest influence, followed by medium

effects of Environmental Transparency and Disclosure Credibility. These results confirm that the model is robust, reliable, and highly suitable for hypothesis testing and managerial implications.

Hypothesis Testing and Path Coefficients

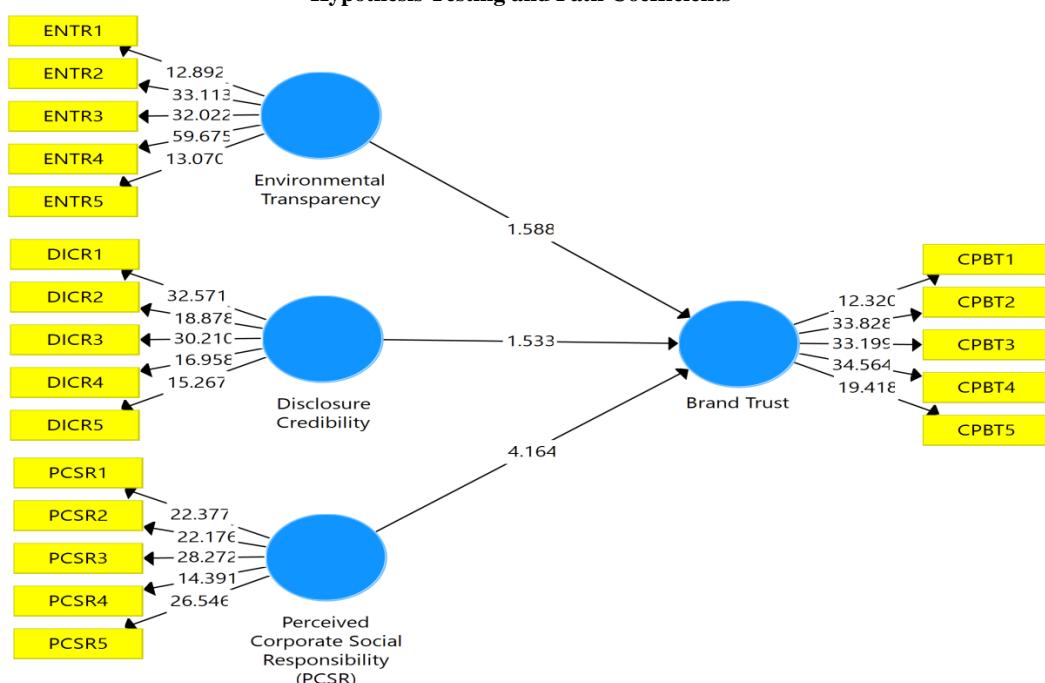


Figure 3: Path Coefficient

Source: SmartPLS Output, 2025.

Table 4: Path Coefficients

H ₀	Variables	Original Sample	T Statistics	P Values	Decision
H ₀₁	Disclosure Credibility	0.226	1.533	0.126	Accepted
H ₀₂	Environmental Transparency	0.236	1.588	0.113	Accepted
H ₀₃	Perceived Corporate Social Responsibility	0.485	4.164	0.000	Rejected

Source: SmartPLS Output, 2025

Key Findings:

- **H₀₁ & H₀₂:** Not statistically significant ($p > 0.05$) - null hypotheses accepted
- **H₀₃:** Statistically significant ($p < 0.001$) - null hypothesis rejected, indicating PCSR has a significant positive effect on brand trust

Table 4 presents the path coefficients, t-statistics, and p-values from the structural model analysis, providing insights into the relationships between carbon footprint reporting dimensions (Disclosure Credibility, Environmental Transparency, and Perceived Corporate Social Responsibility) on Brand Trust in the context of MTN Nigeria.

4.3 Discussion of Findings

H₀₁: Disclosure Credibility has no significant effect on Brand Trust in Nigeria.

The hypothesis was supported, with a path coefficient of 0.226, t-statistic of 1.533, and p-value of 0.126 (> 0.05). Although the relationship is positive, it does not reach statistical significance. This implies that for MTN subscribers in Nigeria, the mere presence of technically credible or verifiable carbon disclosures such as those validated by the IFRS S1 and S2 standards or a CDP rating of 'B-' (MTN Nigeria, 2024) is not sufficient on its own to shift trust levels. This result aligns with Depoers et al. (2016), who noted that credibility is context-sensitive and may be undermined if consumers question the underlying motives or methodological rigour. The finding also suggests a level of skepticism among Nigerian consumers regarding corporate data; as noted by Triasma and Sari (2025), past experiences with perceived greenwashing in environmentally sensitive industries may lead consumers to view technical reports as promotional rhetoric rather than a basis for institutional trust.

H₀₂: Environmental Transparency has no significant effect on Brand Trust in Nigeria.

This hypothesis was also accepted (path coefficient = 0.236, t-statistic = 1.588, $p = 0.113$). While the relationship is positive and slightly stronger than Disclosure Credibility, it remains statistically insignificant. This suggests that simply increasing the volume or visibility of environmental information such as reporting an 11% reduction in Scope 1 and 2 emissions (MTN Nigeria, 2024) does not automatically translate into higher trust in the Nigerian market. This is consistent with Andini et al. (2022), who observed that in developing economies facing economic headwinds, high transparency efforts can sometimes be perceived as costly corporate compliance rather than genuine commitment. Wong et al. (2021) further argued that transparency only yields trust-related benefits when it meets deep accountability criteria that the public can easily monitor, which may still be underdeveloped in Nigeria's voluntary reporting landscape.

H₀₃: Perceived Corporate Social Responsibility (PCSR) has no significant effect on Brand Trust in Nigeria.

The structural model analysis revealed a strong and highly significant positive relationship between Perceived Corporate Social Responsibility and Brand Trust (path coefficient = 0.485, t-statistic = 4.164, $p = 0.000$), leading to the rejection of H₀₃. This is the only significant path in the model, indicating that trust is primarily driven by how subscribers *perceive* the sincerity of MTN's environmental actions rather than the technical quality of its reports. This is exemplified by the Reputation Index score of 79% reported by MTN (MTN Nigeria, 2024), which exceeds its internal benchmarks. The result corroborates findings by Fosu et al. (2024), who noted that in African emerging markets, visible CSR practices significantly bolster stakeholder trust. It reinforces the work of Raho and Benchikh (2025) and Yamani et al. (2025), who found that authentic PCSR reduces perceived risk and builds affective commitment, proving that for MTN Nigeria, "*Doing for Tomorrow, Today*" (MTN Nigeria, 2024) is most effective when subscribers view the actions as sincere social contributions.

5. Conclusion and Recommendations

Based on the findings, it can be concluded that among the dimensions of carbon footprint reporting examined, only Perceived Corporate Social Responsibility (PCSR) exerts a statistically significant positive influence on Brand Trust for MTN in Nigeria. Disclosure Credibility and Environmental Transparency, while yielding positive coefficients, do not reach statistical significance. This suggests that Nigerian subscribers prioritize the perceived sincerity and societal impact of environmental initiatives such as the launch of eco-friendly SIM cards or solar-powered rural telephony sites (MTN Nigeria, 2024) over technical transparency or data-driven disclosures alone.

The following recommendations are proffered:

- Since PCSR is the only significant driver of Brand Trust, MTN should prioritize sustainability initiatives that visibly demonstrate genuine commitment. This includes expanding community-based carbon-offset programs and utilizing consistent storytelling to link technical emission reductions to tangible societal benefits for Nigerians.
- Although Disclosure Credibility and Environmental Transparency did not show significant immediate effects, MTN should continue its leadership as an early adopter of IFRS S1 and S2 standards. By maintaining high methodological traceability and pursuing third-party assurance, MTN can gradually reduce perceived greenwashing risks and educate the market to recognize technical credibility as a pillar of trust.

Policymakers and regulatory bodies (e.g., NESREA and SEC) should consider mandating independent assurance of carbon

disclosures. Simultaneously, enhancing public education on environmental reporting will increase consumer sensitivity to transparency, thereby amplifying the potential impact of these dimensions on brand trust in the future.

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