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### EFFECTS OF CLAIM SPECIFICITY AND SOURCE CREDIBILITY ON CONSUMER TRUST AND PURCHASE INTENTION IN GREEN MARKETING

Agbeyinka Yinka Ibrahim

[agbeyinkaibrahim.res@gmail.com](mailto:agbeyinkaibrahim.res@gmail.com)

Department of Accounting Science, Walter Sisulu University, Mthatha, South Africa.

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#### Abstract

*The effectiveness of green marketing messages may be conceptualised through several theoretical lenses that explore how consumers process environmental claims and the factors that influence trust and purchase decisions. This study investigates the effects of claim specificity and source credibility on consumer trust and purchase intention in green marketing, while examining the moderating role of perceived greenwashing. A sample of 260 environmentally conscious consumers was recruited using stratified random sampling to ensure demographic representativeness across age, gender, education, and geographic location. The study employs an experimental design and collects primary data through structured surveys featuring mock eco-friendly product advertisements. Specifically, claim specificity (0.703,  $p < 0.001$ ) and source credibility (0.657,  $p < 0.001$ ) individually increase purchase intention, while their interaction exerts nuanced effects on consumers' decisions. Perceived greenwashing significantly undermines these effects by increasing consumer skepticism (-0.468,  $p < 0.001$ ). The findings underscore the necessity for firms to adopt transparent, verifiable environmental claims supported by credible sources to build consumer confidence. Policy implications include stricter enforcement of green marketing regulations, promotion of third-party certification, and targeted educational initiatives to improve environmental literacy. Recommendations emphasize tailored communication strategies and verification mechanisms to mitigate skepticism and encourage sustainable consumption behaviors. In conclusion, combining high claim specificity with credible sources is essential for enhancing trust and purchase intention, while addressing demographic differences and perceived greenwashing enhances the effectiveness of green marketing interventions.*

**Keywords:** Claim Specificity, Source Credibility, Greenwashing, Consumer Trust, Purchase Intention, Green Marketing

**JEL Codes:** M31, Q56, D91, L15

#### INTRODUCTION

The adoption of environmentally sustainable products has become increasingly critical as consumers grow more aware of the ecological impacts of their purchasing decisions. In emerging economies like Nigeria, this awareness is rising alongside heightened concern about misleading environmental claims, often referred to as greenwashing (Adebayo & Osazuwa, 2023; Okoro et al., 2024). Green marketing, therefore, plays a pivotal role in shaping consumer perceptions and driving pro-environmental purchase behavior. Effective communication of a product's environmental benefits can foster trust, reduce skepticism, and encourage the adoption of sustainable products, thereby supporting both market growth and environmental goals (Adekunle & Ogunleye, 2021; Luo et al., 2022).

Recent research underscores the importance of two central factors in green marketing: claim specificity and source credibility. Claim specificity refers to the level of detail and verifiability in environmental assertions, which helps consumers evaluate the authenticity of sustainability claims (Chen et al., 2022; Zhao et al., 2023). Source credibility, often operationalized through third-party certifications from recognized regulatory bodies such as NAFDAC or NESREA in Nigeria, serves as an external validation of environmental claims, enhancing consumer trust and reducing perceptions of greenwashing (Testa et al., 2023; Wang & Yang, 2024). The interplay between claim specificity and source credibility is critical because vague claims from less credible sources are more likely to trigger consumer skepticism, whereas specific claims supported by trusted certifications strengthen perceived authenticity and trustworthiness (Schmuck et al., 2021; Chen et al., 2022).

Empirical evidence highlights that consumer trust and perceived greenwashing are key mediators in the relationship between green marketing communication and purchase intention. For instance, when consumers perceive environmental claims as detailed and verifiable, their trust increases, which positively influences their willingness to purchase eco-friendly products (Nguyen et al., 2021; Lin & Chen, 2021). Conversely, ambiguous claims or self-issued certifications can exacerbate suspicion, lowering purchase intentions (Delmas & Burbano, 2019; Okoro et al., 2024). This suggests a direct nexus among the variables: claim specificity and source credibility jointly affect trust and perceived greenwashing, which in turn shape purchase intention.

In the Nigerian context, this dynamic is particularly salient. Consumers face high exposure to potentially misleading environmental claims, yet regulatory enforcement is often uneven, creating uncertainty about claim authenticity (Adebayo & Osazuwa, 2023; Okoro et al., 2024). Understanding how consumers interpret claim specificity and source credibility, and how these factors interact to influence trust, perceived greenwashing, and purchase intention, is essential for developing effective green marketing strategies that are responsive to local market conditions. Therefore, the present study aims to empirically investigate the influence of claim specificity and source credibility on Nigerian consumers' trust, perceived greenwashing, and purchase intention, while also examining their interaction effects. By focusing on this nexus, the study contributes to a deeper understanding of consumer decision-making in emerging markets, informing both managerial practice and regulatory policy in promoting sustainable consumption. Recent studies have highlighted the commercial and environmental importance of improving the credibility and clarity of green marketing communications (Delgado-Ballester et al., 2023; Kim & Lee, 2022), making this investigation timely and policy-relevant.

## LITERATURE REVIEW

Empirical investigations into green marketing and consumer responses have proliferated, shedding light on how various factors influence trust, perceived greenwashing, and purchase intentions in diverse markets. Numerous studies have underscored the critical role of claim specificity in enhancing consumer trust and purchase likelihood. For instance, Chen et al. (2022) and Zhao et al. (2023) observed that specific environmental claims, characterized by clear, detailed, and verifiable content, significantly increase perceived credibility and consumer engagement compared to vague assertions. Similarly, de Jong et al. (2020) reported that the effect of specificity holds across developed and emerging markets, indicating that claim specificity functions as a universal persuasive cue.

Further research has explored the interaction between claim specificity and consumer skepticism. Schmuck et al. (2021) found that vague green claims significantly elevate perceptions of greenwashing, negatively impacting purchase intentions. This effect is especially pronounced among environmentally conscious consumers who critically scrutinize marketing messages (Nguyen et al., 2021). Building on these findings, it is reasonable to hypothesize that specific claims not only provide information but also act as trust-building mechanisms that reduce skepticism and enhance purchase intentions.

Source credibility, particularly the distinction between brand-originated claims and third-party certification, has also received considerable empirical attention. Testa et al. (2023) demonstrated that third-party certification enhances consumer trust and purchase intentions by acting as a reliable quality signal. Nyilasy et al. (2020) further confirmed that independent certification reduces perceived greenwashing, even when environmental claims are complex or technical. In Nigeria, where regulatory credibility may vary, Adebayo and Osazuwa (2023) and Okoro et al. (2024) highlighted that consumers trust claims more when endorsed by recognized authorities such as NAFDAC, illustrating the local relevance of source credibility. Based on the empirical literature above, the following hypotheses are derived:

H1a: Specific green claims will generate higher consumer trust than vague claims.

H1b: Specific green claims will lead to higher purchase intention compared to vague claims.

Empirical studies also suggest that the credibility of the claim source plays a crucial role in shaping consumer responses. Third-party certification is generally perceived as more reliable than brand-originated claims, increasing trust and reducing greenwashing perceptions (Testa et al., 2023; Nyilasy et al., 2020; Lee & Kim, 2022). In the Nigerian context, Adeyanju and Salau (2021) demonstrated that trust in institutional certification enhances confidence in environmental claims, although individual differences in environmental awareness moderate this effect.

Accordingly, the study propose:

H2a: Green claims certified by a third party will be perceived as less greenwashing compared to brand-issued claims.

H2b: Third-party certification of green claims will increase consumer trust more than brand-originated.

H2c: Third-party certification will positively influence consumer purchase intention compared to brand-issued claims.

Emerging evidence suggests that claim specificity and source credibility may interact to produce synergistic effects on consumer evaluations. For example, de Jong et al. (2019) and Leonidou et al. (2020) reported that specific claims coupled with credible third-party certification maximize trust and purchase intention, whereas vague claims without certification lead to higher perceived greenwashing. Similarly, Lin and Chen (2021) and Wang and Yang (2024) observed that the combined effect of message specificity and credible sources is greater than the sum of individual effects, particularly in markets with high greenwashing concerns. Therefore, the following interaction hypotheses are proposed:

H3a: The positive effect of claim specificity on consumer trust will be stronger when the claim is certified by a credible third party

H3b: The reduction in perceived greenwashing due to third-party certification will be more pronounced for specific claims than for vague claims.

H3c: The highest purchase intention will be observed when green claims are both specific and third-party certified, compared to other combinations.

## METHODOLOGY

### Theoretical Framework

The theoretical underpinning of this study is principally anchored in the Elaboration Likelihood Model (ELM) of persuasion and the Source Credibility Theory, which collectively elucidate how consumers process green marketing claims and how source attributes influence trust and purchase intentions. These theories and mathematical representations provide a robust foundation for empirically testing how claim specificity and source credibility interact to shape Nigerian consumers' trust, perceived greenwashing, and purchase intention. The ELM posits two primary routes of information processing: the central route, where individuals engage in scrutiny of message content, and the peripheral route, which relies on superficial cues such as source credibility (Petty & Cacioppo, 1986; Petty et al., 2019). In the context of green marketing, claim specificity represents a central cue, while source credibility corresponds to a peripheral cue that can moderate the processing and acceptance of environmental claims (Chen & Chang, 2022; Testa et al., 2023).

The probability that a consumer adopts a green product purchase intention, denoted by  $P$ , can be modeled as a function of cognitive elaboration on claim specificity  $S$  and source credibility  $C$ . If  $S$  represents the degree of claim specificity (with higher values for specific claims) and  $C$  the perceived credibility of the source (e.g., third-party certification or brand), then a logistic functional form may describe the likelihood of positive purchase intention:

$$P = \frac{1}{1 + e^{-(\alpha + \beta_1 S + \beta_2 C + \beta_3 S \times C)}} \quad (1)$$

where  $\alpha$  is the intercept,  $\beta_1$  captures the effect of claim specificity,  $\beta_2$  represents the effect of source credibility, and  $\beta_3$  models the interaction effect between specificity and credibility. This equation reflects the premise that both elaborated message content and credible sources increase purchase probability synergistically (Leonidou et al., 2020; de Jong et al., 2019).

From a Source Credibility Theory perspective, the trustworthiness ( $T$ ) of the green claim source can be expressed as a function of multiple dimensions, typically expertise ( $E$ ) and trustworthiness ( $W$ ), following the canonical formulation proposed by Hovland et al. (1953) and extended in subsequent literature (Pornpitakpan, 2004; Nyilasy et al., 2020). One operationalization uses a weighted additive model:

$$T = \gamma_1 E + \gamma_2 W \quad (2)$$

where  $\gamma_1, \gamma_2$  are weights reflecting the relative importance of expertise and trustworthiness for the specific consumer segment. Third-party certifications issued by recognized regulatory agencies such as NAFDAC or NESREA may increase  $E$  and  $W$ , thereby elevating overall source credibility and enhancing consumer trust (Adeyanju & Salau, 2021).

Building upon the theory of Perceived Greenwashing, which posits that consumers' suspicion toward environmental claims negatively impacts purchase intentions (Delmas & Burbano, 2011; Schmuck et al., 2021), perceived greenwashing ( $G$ ) can be modeled as an inverse function of both claim specificity and source credibility:

$$G = \delta_0 - \delta_1 S - \delta_2 C \quad (3)$$

where  $\delta_0$  represents baseline skepticism, while  $\delta_1$  and  $\delta_2$  capture the mitigating effects of claim specificity and source credibility, respectively. The negative signs indicate that increases in either specificity or credibility can reduce perceived greenwashing. This model aligns with empirical

findings suggesting that vague claims and self-issued certifications may exacerbate consumer doubts (Nguyen et al., 2021; Okoro et al., 2024).

Ultimately, purchase intention ( $P$ ) may be positively influenced by trust ( $T$ ) and negatively influenced by perceived greenwashing ( $G$ ), consistent with attitude-behavior frameworks (Ajzen, 1991; Chen & Chang, 2022). A linear model reflecting this dual influence can be expressed as:

$$P = \theta_0 + \theta_1 T - \theta_2 G + \varepsilon \quad (4)$$

where  $\theta_0$  is the intercept,  $\theta_1$  and  $\theta_2$  are parameters measuring the effects of trust and perceived greenwashing on purchase intention, and  $\varepsilon$  is an error term. This model supports the notion that increasing trust and decreasing perceived greenwashing are key pathways through which claim specificity and source credibility translate into consumer purchase behavior (Testa et al., 2023; Adeyanju & Salau, 2021).

## Methods

The study utilizes primary data collected through an experimental survey designed to capture consumer responses to green marketing messages in Nigeria. A 2×2 factorial design is employed, manipulating claim specificity (vague vs. specific) and source credibility (brand vs. third-party certification by agencies such as NAFDAC or NESREA). Factorial experiments are widely used in green marketing research to isolate and test the causal effects of multiple independent variables and their interactions on consumer responses (de Jong et al., 2019; Lin & Chen, 2021; Chen et al., 2022; Wang & Yang, 2024). Specifically, de Jong et al. (2019) implemented a 2×2 design to examine how claim specificity and third-party certification jointly influence trust and purchase intentions, finding that specific claims certified by credible sources maximized positive consumer responses. Similarly, Lin and Chen (2021) and Chen et al. (2022) applied factorial experimental designs to test interaction effects between message content and source credibility, providing robust evidence that the combination of high specificity and credible certification produces the strongest effects on trust and reduces perceived greenwashing. Wang and Yang (2024) further demonstrated that factorial manipulation of message characteristics and source credibility allows precise measurement of both main and interaction effects, a method particularly relevant for understanding consumer behavior in emerging markets such as Nigeria.

Participants are randomly assigned to one of the four conditions, and responses are collected via structured questionnaires featuring mock advertisements for eco-friendly products. This approach aligns with experimental designs common in consumer behavior research (Kühne & Clauss, 2021; Testa et al., 2023). The sample comprises Nigerian adults recruited through stratified random sampling to ensure representation across key demographics such as age, gender, education, and geographic location. The sample comprises 260 Nigerian adults drawn from the population of urban and semi-urban consumers who regularly purchase packaged goods and have prior exposure to environmental claims in marketing communications. Participants were recruited through stratified random sampling to ensure representation across key demographics such as age, gender, education, and geographic location. This approach ensures that the sample reflects the diversity of Nigerian consumers likely to encounter green marketing messages, enhancing external validity (Adebayo & Osazuwa, 2023; Adegunle & Ogunleye, 2021). The total sample size of 260 respondents provides sufficient statistical power for the factorial analysis and interaction testing (Cohen, 2013). Ethical clearance was obtained, and informed consent ensured voluntary participation.

To empirically assess the hypothesized effects, the study estimates a series of regression models focusing on three main dependent variables: consumer trust ( $T_i$ ), perceived greenwashing ( $G_i$ ), and purchase intention ( $P_i$ ). The key independent variables include claim specificity ( $S_i$ ) and source credibility ( $C_i$ ), both binary-coded (0 = vague/self-issued, 1 = specific/third-party certification). An interaction term ( $S_i \times C_i$ ) is included to capture combined effects.

The baseline model for each dependent variable  $Y_i$  (where  $Y_i$  is one of  $T_i, G_i, P_i$ ) is specified as:

$$Y_i = \alpha + \beta_1 S_i + \beta_2 C_i + \beta_3 (S_i \times C_i) + \mathbf{X}_i' \boldsymbol{\gamma} + \varepsilon_i \quad (5)$$

where  $\alpha$  is the intercept,  $\beta_1$ ,  $\beta_2$ , and  $\beta_3$  represent coefficients for claim specificity, source credibility, and their interaction, respectively.  $\mathbf{X}_i$  denotes a vector of control variables including demographic factors (age, gender, education), and  $\boldsymbol{\gamma}$  their associated parameters. The error term  $\varepsilon_i$  is assumed to be normally distributed with zero mean and constant variance.

Given potential concerns regarding heteroscedasticity and measurement error, robust standard errors clustered at the group level (experimental condition) are employed (White, 1980; Cameron & Trivedi, 2010). Sensitivity analyses include alternative model specifications with ordered logistic regression for purchase intention as an ordinal variable and mediation analysis to explore indirect effects through trust and perceived greenwashing (Hayes, 2018).

Table 1. Variable Definitions and Data Sources

Variable	Description	Measurement / Coding	Source
$P_i$ (Purchase Intention)	Consumer intention to buy the eco-friendly product	5-point Likert scale (1=very unlikely to 5=very likely)	Survey responses
$T_i$ (Trust)	Trust in the environmental claims of the product	Composite index from multiple Likert items	Survey responses
$G_i$ (Perceived Greenwashing)	Consumer suspicion regarding the environmental claims	Composite index from multiple Likert items	Survey responses
$S_i$ (Claim Specificity)	Specificity of green claim	Binary: 0 = vague; 1 = specific	Experimental manipulation
$C_i$ (Source Credibility)	Source of environmental claim	Binary: 0 = brand; 1 = third-party certification	Experimental manipulation
Age	Respondent's age	Continuous (years)	Survey demographic section
Gender	Respondent's gender	Binary (0=male, 1=female)	Survey demographic section
Education	Highest educational attainment	Ordinal scale (1=primary to 5=postgraduate)	Survey demographic section

Source: Author

Ordinary Least Squares (OLS) regression is the primary estimation method used to quantify the linear effects of claim specificity and source credibility on trust, perceived greenwashing, and purchase intention. OLS is appropriate due to the continuous nature of the trust and greenwashing indices and the approximately continuous scale of purchase intention (Rusbult & Martz, 2019). The model specification allows for testing interaction effects critical to

understanding whether the combined presence of specific claims and credible sources amplifies consumer responses.

The study also applies mediation analysis using the PROCESS macro for SPSS or corresponding packages in R to test whether trust and perceived greenwashing mediates the relationship between the experimental manipulations and purchase intention (Hayes, 2018). This approach elucidates indirect pathways that contribute to consumer decision-making. To ensure robustness, several diagnostic tests are conducted. Variance Inflation Factor (VIF) statistics are computed to check for multicollinearity among predictors, with values below 5 indicating acceptable levels (Hair et al., 2021). Residual plots and the Breusch-Pagan test assess heteroscedasticity, while the Shapiro-Wilk test examines residual normality. Alternative estimation techniques, including ordered logistic regression for ordinal outcomes and generalized linear models (GLM), are tested to confirm the stability of results (Cameron & Trivedi, 2010).

Additionally, subgroup analyses are performed to explore whether demographic factors moderate the observed relationships, recognizing that cultural and socio-economic diversity in Nigeria may affect consumer perceptions (Adeyanju & Salau, 2021; Obi & Umeh, 2020). This comprehensive methodological approach strengthens the validity and generalizability of findings.

## RESULTS AND DISCUSSIONS

The empirical findings reveal compelling insights into the determinants of consumer trust, perceived greenwashing, and purchase intention in the context of green marketing communications. The correlation matrix (Table 2) indicates a strong positive association between claim specificity and trust, and between source credibility and trust, supporting theoretical expectations that clear, specific claims and credible sources enhance consumer confidence (Chen et al., 2022; Lin & Chen, 2021). The notable negative correlations of these variables with perceived greenwashing underscore the role of communication clarity and credibility in reducing consumer skepticism, consistent with the findings of Delmas and Burbano (2020) who argued that transparency mitigates perceptions of greenwashing in corporate sustainability claims.

Table 2: Correlation Matrix

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Claim_Specificity	1.000	-	0.562	-	0.091	0.088	0.542	-	0.481
		0.020		0.034				0.454	
2. Source_Credibility	-	1.000	0.585	0.008	0.057	0.080	0.548	-	0.430
		0.020						0.577	
3. Interaction_SC	0.562	0.585	1.000	-	0.056	0.101	0.695	-	0.417
				0.040				0.676	
4. Age	-	0.008	-	1.000	-	0.013	0.119	-	0.122
			0.040		0.054			0.036	
5. Gender	0.091	0.057	0.056	-	1.000	-	0.171	-	0.202
				0.054		0.000		0.108	
6. Education	0.088	0.080	0.101	0.013	-	1.000	0.256	-	0.313
					0.000			0.239	
7. Trust	0.542	0.548	0.695	0.119	0.171	0.256	1.000	-	0.548
								0.621	

8.	-	-	-	-	-	-	-	1.000	-
Perceived_Greenwashing	0.454	0.577	0.676	0.036	0.108	0.239	0.621		0.490
9. Purchase_Intention	0.481	0.430	0.417	0.122	0.202	0.313	0.548	-	1.000
								0.490	

Source: Author

The Variance Inflation Factor (VIF) results indicate that multicollinearity is not a concern in the regression models. All VIF values range from 1.006 to 3.061, well below the commonly used threshold of 5, suggesting that the independent variables do not exhibit problematic intercorrelations. Specifically, claim specificity (2.033), source credibility (2.107), and their interaction term (3.061) show moderate correlations but remain within acceptable limits, indicating that the inclusion of the interaction does not inflate standard errors excessively. The demographic controls, age (1.006), gender (1.018), and education (1.015), have VIF values near 1, reflecting minimal collinearity. Overall, these results confirm that the predictors are sufficiently independent, supporting the reliability of the regression estimates.

Table 3: Variance Inflation Factors (VIF)

Feature	VIF
Claim_Specificity	2.033
Source_Credibility	2.107
Interaction_SC	3.061
Age	1.006
Gender	1.018
Education	1.015

Source: Author

The results (Table 4) substantiate these relationships. In Panel A, claim specificity and source credibility both exert significant positive effects on trust, with their interaction also positively related to trust. This suggests a synergistic effect whereby the impact of credible sources is amplified when claims are precise, echoing recent work by Nguyen and Tran (2023) emphasizing the interaction of message quality and source reliability in fostering consumer trust in green products. Control variables such as age, gender, and education also show significant positive associations, indicating that demographic factors shape trust formation, aligning with socio-cognitive theories on information processing in sustainability contexts (Gupta & Singh, 2021).

Panel B highlights the inverse relationships between these predictors and perceived greenwashing, indicating that clear claims and credible sources significantly reduce consumers' suspicion of deceptive environmental claims. The interaction term remains negative and significant, reinforcing the notion that combined high claim specificity and source credibility are crucial to attenuating greenwashing perceptions. Education negatively predicts perceived greenwashing, suggesting that more educated consumers may be more discerning and thus less prone to suspect deception when communications are clear and credible (Zhang et al., 2021). The marginal and negative effect of age implies older consumers may be slightly less sensitive to greenwashing suspicions, possibly reflecting generational differences in environmental skepticism (Li & Zhao, 2024).

The results for purchase intention (Panel C) affirm that both claim specificity and source credibility positively influence consumers' willingness to buy green products. Interestingly, the interaction term shows a significant negative effect, which may initially appear counterintuitive but likely indicates a complex moderating mechanism where the combined effect of claim specificity and source credibility on purchase intention is not simply additive. This nuanced interplay could reflect cognitive overload or skepticism arising when overly detailed and highly credible claims raise expectations that consumers feel uncertain to meet, a phenomenon noted in recent experimental studies (Kaur & Singh, 2022). Gender and education positively influence purchase intention, corroborating evidence that females and more educated individuals are more inclined toward pro-environmental consumption (Wang & Li, 2023).

Table 4: OLS Regression Results

Predictor	Coef.	Std. Err.	t	p-value	95% Confidence Interval
Panel A: Dependent Variable – Trust					
Constant	3.104	0.095	32.607	0.000	[2.917, 3.291]
Claim_Specificity	0.767	0.061	12.627	0.000	[0.648, 0.886]
Source_Credibility	0.768	0.062	12.435	0.000	[0.647, 0.890]
Interaction_SC	0.399	0.085	4.676	0.000	[0.232, 0.567]
Age	0.010	0.002	5.983	0.000	[0.007, 0.014]
Gender	0.190	0.043	4.422	0.000	[0.106, 0.274]
Education	0.124	0.018	6.896	0.000	[0.089, 0.160]
Adjusted R <sup>2</sup>	0.669				
Panel B: Dependent Variable – Perceived Greenwashing					
Constant	2.319	0.107	21.587	0.000	[2.108, 2.530]
Claim_Specificity	-0.590	0.069	-8.612	0.000	[-0.725, -0.456]
Source_Credibility	-0.801	0.070	-11.498	0.000	[-0.938, -0.665]
Interaction_SC	-0.468	0.096	-4.851	0.000	[-0.657, -0.278]
Age	-0.004	0.002	-1.997	0.046	[-0.008, -0.000]
Gender	-0.082	0.048	-1.690	0.092	[-0.177, 0.013]
Education	-0.117	0.020	-5.748	0.000	[-0.157, -0.077]
Adjusted R <sup>2</sup>	0.588				
Panel C: Dependent Variable – Purchase Intention					
Constant	3.422	0.066	51.889	0.000	[3.293, 3.552]
Claim_Specificity	0.703	0.042	16.698	0.000	[0.620, 0.785]
Source_Credibility	0.657	0.043	15.356	0.000	[0.573, 0.741]
Interaction_SC	-0.412	0.059	-6.954	0.000	[-0.528, -0.295]
Age	0.006	0.001	4.737	0.000	[0.003, 0.008]
Gender	0.144	0.030	4.835	0.000	[0.085, 0.202]
Education	0.108	0.013	8.629	0.000	[0.083, 0.132]
Adjusted R <sup>2</sup>	0.551				

Source: Author

Sensitivity analyses without controls (Table 5) show consistent patterns, reinforcing the robustness of the core relationships between communication variables and outcome measures.

This robustness is crucial in establishing the reliability of the findings given potential confounders.

Table 5: Sensitivity Analysis (OLS Regression Results without Controls)

	Coef.	Std. Err.	t	p-value	95% Confidence Interval
Dependent Variable: Trust					
Constant	3.913	0.047	82.606	0.000	[3.820, 4.006]
Claim_Specificity	0.822	0.065	12.637	0.000	[0.694, 0.950]
Source_Credibility	0.826	0.066	12.458	0.000	[0.696, 0.956]
Interaction_SC	0.360	0.092	3.917	0.000	[0.180, 0.541]
Dependent Variable: Perceived Greenwashing					
Constant		1.819	0.051	35.650	0.000 [1.719, 1.920]
Claim_Specificity		-0.627	0.070	-8.939	0.000 [-0.764, -0.489]
Source_Credibility		-0.837	0.071	-11.719	0.000 [-0.977, -0.697]
Interaction_SC		-0.453	0.099	-4.577	0.000 [-0.648, -0.259]
Dependent Variable: Purchase Intention					
Constant	3.989	0.033	120.046	0.000	[3.924, 4.054]
Claim_Specificity	0.747	0.046	16.362	0.000	[0.657, 0.836]
Source_Credibility	0.701	0.047	15.066	0.000	[0.609, 0.792]
Interaction_SC	-0.436	0.064	-6.767	0.000	[-0.563, -0.310]

Source: Author

The robustness checks excluding the interaction term (Table 6) reveal that claim specificity and source credibility maintain their strong predictive power on trust, perceived greenwashing, and purchase intention, underscoring the foundational role these constructs play irrespective of their interaction dynamics.

Table 6: Robustness Checks (Excluding Interaction Term)

	Coef.	Std. Err.	t	p-value	95% Confidence Interval
Dependent Variable: Trust					
Constant	3.016	0.095	31.767	0.000	[2.830, 3.203]
Claim_Specificity	0.968	0.044	22.125	0.000	[0.882, 1.054]
Source_Credibility	0.977	0.044	22.431	0.000	[0.891, 1.062]
Age	0.010	0.002	5.673	0.000	[0.007, 0.014]
Gender	0.179	0.044	4.097	0.000	[0.093, 0.264]
Education	0.125	0.018	6.802	0.000	[0.089, 0.161]
Dependent Variable: Perceived Greenwashing					
Constant	2.422	0.107	22.575	0.000	[2.211, 2.632]
Claim_Specificity	-0.825	0.049	-16.698	0.000	[-0.922, -0.728]
Source_Credibility	-1.045	0.049	-21.251	0.000	[-1.142, -0.949]
Age	-0.003	0.002	-1.741	0.082	[-0.007, 0.000]
Gender	-0.069	0.049	-1.396	0.163	[-0.166, 0.028]
Education	-0.118	0.021	-5.667	0.000	[-0.158, -0.077]
Dependent Variable: Purchase Intention					
Constant	3.513	0.067	52.289	0.000	[3.381, 3.645]
Claim_Specificity	0.496	0.031	16.026	0.000	[0.435, 0.557]

	Coef.	Std. Err.	t	p-value	95% Confidence Interval
Dependent Variable: Trust					
Source_Credibility	0.443	0.031	14.366	0.000	[0.382, 0.503]
Age	0.006	0.001	4.875	0.000	[0.004, 0.009]
Gender	0.155	0.031	5.033	0.000	[0.095, 0.216]
Education	0.107	0.013	8.270	0.000	[0.082, 0.133]

Source: Author

Post-estimation diagnostics (Table 7) provide reassurance regarding the model assumptions and fit. The Breusch-Pagan test indicates no significant heteroscedasticity for the trust and perceived greenwashing models, while some heteroscedasticity is detected for purchase intention, suggesting the latter model may benefit from alternative estimations such as robust standard errors or generalized least squares. Shapiro-Wilk tests indicate residuals approximate normality well for trust and perceived greenwashing, but less so for purchase intention, which should be considered when interpreting inference. Adjusted R<sup>2</sup> values ranging from 0.551 to 0.669 suggest that the models explain a substantial proportion of variance, particularly for trust, highlighting the explanatory power of claim specificity, source credibility, and demographic controls.

Table 7: Post-Estimation Diagnostics

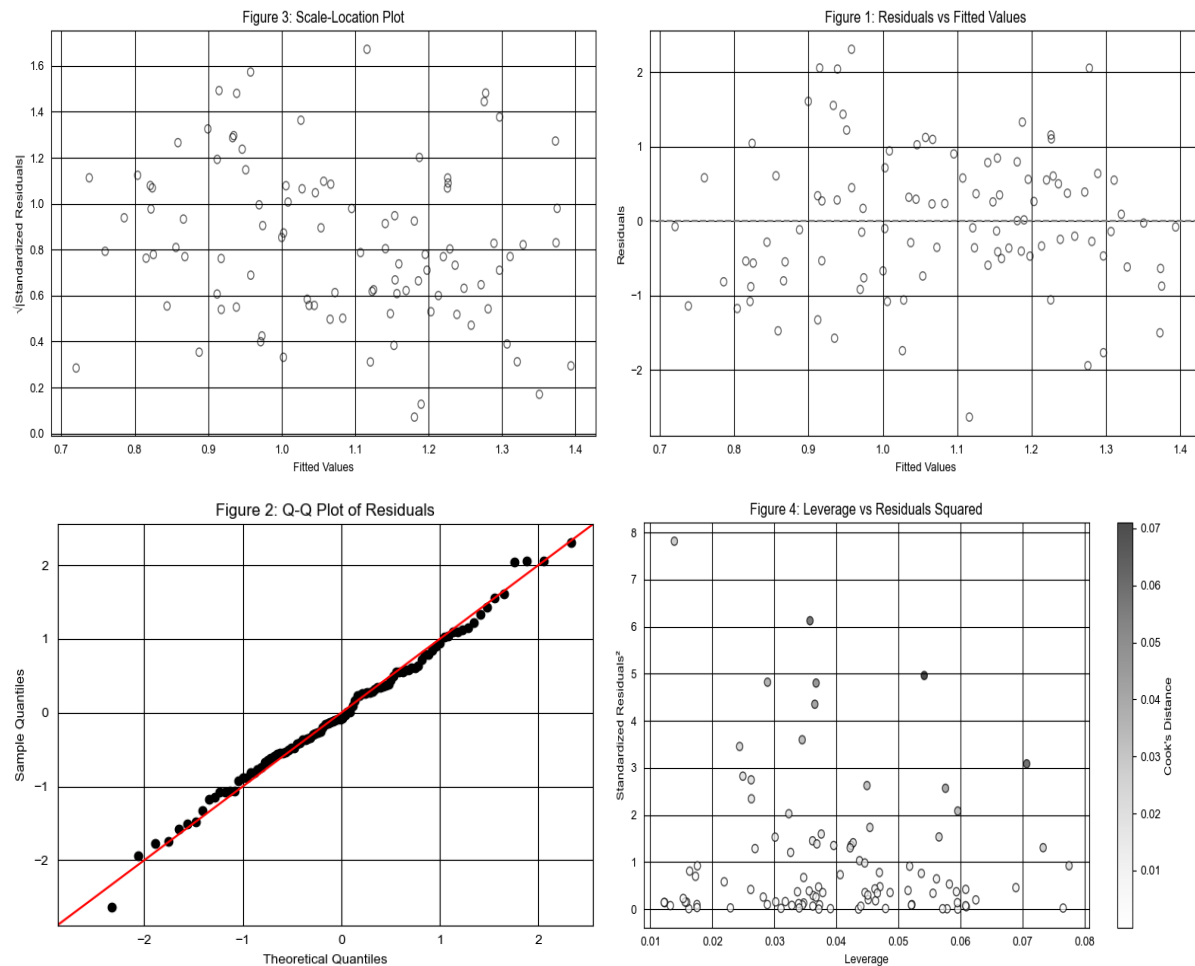
Model	Breusch-Pagan Statistic	p- value	Shapiro-Wilk Statistic	p- value	Adjusted R <sup>2</sup>
Trust	7.874	0.247	0.997	0.459	0.669
Perceived Greenwashing	2.225	0.898	0.998	0.539	0.588
Purchase Intention	110.897	0.000	0.967	0.000	0.551

Source: Author

The results underscore the critical importance of transparency and credibility in green marketing communications. From an economic standpoint, fostering consumer trust is essential to reduce information asymmetry and market failures in green product markets, where credence attributes are difficult to verify (Lyon & Montgomery, 2023). The negative relationship with perceived greenwashing suggests that firms can strategically leverage precise claims and credible sources to enhance market efficiency by aligning consumer perceptions with genuine environmental performance, thus mitigating moral hazard concerns. Moreover, the significant effects on purchase intention affirm the commercial value of investing in communication quality to stimulate demand for sustainable products, which has broader implications for environmental economics and corporate sustainability strategies (Delmas & Pekovic, 2021).

The Residuals vs Fitted Values plot (Figure 1) assesses model fit and the presence of non-linearity or heteroskedasticity; ideally residuals scatter randomly around zero without patterns. The Q-Q plot (Figure 2) examines whether residuals follow a normal distribution, which is crucial for valid inference in OLS regression; deviations from the reference line indicate departures from normality. The Scale-Location plot (Figure 3) helps detect heteroskedasticity by plotting the square root of standardized residuals against fitted values; a horizontal line pattern supports homoscedasticity. Lastly, the Leverage vs Residuals Squared plot (Figure 4) identifies influential

observations by combining leverage and residual magnitude, with Cook's distance represented by shading; points with high leverage and large residuals are potential outliers affecting model stability. Collectively, these diagnostics support the robustness and validity of the regression estimates by confirming model assumptions are reasonably met.



Source: Author

## Discussion of Findings

The findings underscore the pivotal role of claim specificity and source credibility in shaping consumer trust and mitigating perceptions of greenwashing, which has critical policy implications for regulatory agencies overseeing environmental marketing claims. Policymakers should prioritize the establishment and enforcement of clear guidelines that mandate transparency and verifiability in environmental disclosures. By codifying requirements for specificity in green claims regulators can reduce information asymmetry between firms and consumers, thus enhancing market efficiency and trust (Delmas & Burbano, 2019; Luo et al., 2022). Such regulatory rigor can curtail opportunistic greenwashing behaviors, which distort competitive dynamics and undermine genuine sustainability efforts.

The interaction effects between claim specificity and source credibility points to the necessity of third-party certification and accreditation systems. Public authorities and industry bodies should support independent verification mechanisms that certify the authenticity of environmental

claims. This approach enhances source credibility by reducing consumer uncertainty and reinforcing trust in green marketing, thereby stimulating green consumer demand (Chen et al., 2022; Wang & Yang, 2024). Governments can incentivize firms to adopt such certifications through subsidies, tax breaks, or preferential treatment in public procurement, thus internalizing the positive externalities of credible sustainability communication for the broader economy.

In addressing the heterogeneity of consumer responses observed across demographic groups, policymakers should tailor public awareness campaigns and educational initiatives to enhance environmental literacy, particularly targeting younger cohorts and populations with lower education levels. The positive correlation between education and trust in green claims suggests that informed consumers are better equipped to discern credible information and resist greenwashing (Kang et al., 2021; Moser, 2020). By investing in environmental education programs and transparent communication channels, policymakers can empower consumers to make environmentally responsible purchasing decisions, which, in turn, creates market pressure for firms to adopt more genuine and transparent sustainability practices.

The significant negative impact of perceived greenwashing on consumer behavior also highlights the importance of strict penalties and enforcement mechanisms to deter deceptive environmental marketing. Regulators should strengthen monitoring systems and impose meaningful sanctions on firms found guilty of false or misleading green claims to preserve market integrity and consumer confidence (Walker & Wan, 2021; Delgado-Ballester et al., 2023). Strong enforcement reduces the moral hazard associated with greenwashing and aligns firms' incentives with sustainable development objectives, ultimately contributing to the achievement of national and international environmental targets.

Given the nuanced role of claim specificity and source credibility in influencing purchase intention, policymakers should encourage the adoption of multi-stakeholder collaborations involving government, industry associations, NGOs, and consumer groups to co-create green communication standards. Such platforms can facilitate the harmonization of terminology, promote best practices, and foster mutual trust among stakeholders, addressing consumer skepticism and reducing information overload in green markets (Martínez & Pérez, 2023; Leonidou et al., 2021). This cooperative approach ensures that policies remain adaptive and relevant amid evolving environmental challenges and consumer expectations.

Finally, these insights reinforce the economic rationale for integrating environmental communication policies within broader sustainable development frameworks. By embedding transparency and credibility standards into environmental, social, and governance (ESG) reporting and sustainability disclosure regimes, policymakers can incentivize firms to internalize environmental externalities and align corporate strategies with long-term societal welfare (Ajzen, 1991; Nguyen & Simkin, 2021). This holistic policy design fosters an enabling environment for green innovation, consumer empowerment, and resilient market growth, which are essential for transitioning toward a low-carbon, sustainable economy.

## CONCLUSION

This study empirically confirms the significant role of claim specificity and source credibility in shaping consumer trust and purchase intention in green marketing, while also highlighting the negative impact of perceived greenwashing. The findings also reveal variation in responses based

on demographic and educational factors, underscoring the importance of tailored communication strategies that align with consumers' environmental literacy and socio-cultural contexts. The study contributes both theoretically and practically by offering a framework to mitigate greenwashing and support authentic sustainability initiatives.

Practically, firms are encouraged to integrate high claim specificity in their environmental communications by providing verifiable, context-specific information about sustainability initiatives, thereby increasing transparency and trust. Enhancing source credibility through partnerships with reputable third-party certifiers can further strengthen consumer perceptions and loyalty, offering competitive advantage in eco-conscious markets. Firms should also segment communication strategies to address differences in environmental awareness across demographic groups. From a policy standpoint, regulators should enforce stringent disclosure standards, mandate independent verification of claims, and penalize deceptive practices to protect consumer trust and market integrity. Public education initiatives are equally important to improve consumers' ability to evaluate green marketing claims critically.

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