

The Influence of Green Marketing Communication and Brand Credibility through the Mediation of Environmental Attitudes and Moderation of Income Levels on Purchasing Decisions of Green Marketing Products in Aceh

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Abstract

The issue of environmental sustainability has become increasingly important, particularly in the context of green product marketing, making it crucial to understand the factors that influence green product purchasing decisions. This study aims to clarify how brand credibility and green marketing communication affect consumer behavior through environmental attitudes and the moderating impact of income levels. Primary data from 300 green product consumers, gathered via a structured questionnaire and analyzed using Structural Equation Modeling (SEM-PLS), reveal several key findings. Brand credibility significantly enhances both environmental attitudes and purchasing decisions, with environmental attitudes playing a critical mediating role in these relationships. Green marketing communication also positively impacts environmental attitudes and purchasing decisions. Additionally, income levels positively affect purchasing decisions but negatively moderate the interaction between environmental attitudes and purchasing decisions. These results underscore the essential role of environmental attitudes in mediating the effects of brand credibility and green marketing communication on purchasing decisions, as well as the nuanced influence of income levels on consumer behavior regarding sustainable products.

Keywords: *Green Marketing Communication, Brand Credibility, Environmental Attitudes, Income Levels, Purchasing Decisions.*

Introduction

Green marketing communication plays a crucial role in influencing consumer behavior towards purchasing green products. Several studies have delved into the relationship between green marketing strategies, brand credibility, environmental attitudes, and purchasing decisions. Studies reveal that linking green innovation to brand credibility and environmental attitudes positively impacts purchasing decisions (Olsen, et al., 2014; Asyhari and Yuwalliatin, 2021; Akturan, 2018). Environmental attitudes mediate the relationship between green marketing and purchasing decisions, with e-WOM also playing a role (Romadhany, 2024). Additionally, income levels may moderate the effects of green marketing communication and brand credibility on purchasing decisions, highlighting the need for tailored strategies (Kumar and Ghodeswar, 2015). These insights help managers develop targeted approaches to promote sustainable consumption across different income levels.

Empirical research on green marketing communication and brand credibility highlights several gaps. Studies are needed to examine the mediating roles of green brand image and attitudes toward green branding in the relationship between attachment to green branding and excessive product packaging (Kerdpitak and Mekham, 2019). Additionally, limited research has explored green skepticism across different economies, which can offer valuable insights into how diverse economic backgrounds affect consumer responses to green advertising (Silva et al., 2020). Addressing these gaps will enhance the understanding of how green marketing communication and brand credibility influence purchasing decisions of green products.

Research on green marketing communication and brand credibility investigates how green marketing shapes consumer attitudes. Sivaram, Munawar and Ali, (2019) highlight the role of media and credibility in influencing perceptions. Exploring green brand positioning and consumer knowledge on purchase

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decisions can reveal factors driving green product purchases, as a 2022 study on green product purchase intention suggests. Additionally, examining the mediating effect of green packaging on consumer purchase intention, as studied by P and Ariestya, (2022), offers insights into sustainable consumption behaviors. These research directions enhance understanding of green marketing's impact on purchasing decisions, aiding marketers and policymakers in promoting sustainable practices.

Literature Review and Hypothesis Development

The Influence of Green Marketing Communication on Environmental Attitudes

Green marketing communication significantly influences consumer attitudes towards environmental issues and green products. Studies highlight the importance of corporate credibility in shaping attitudes towards green brands (Olsen, Slotegraaf and Chandukala, 2014) and emphasize the role of environmental knowledge and awareness (Huang, Yang and Wang, 2014). (Wu and Chen, 2014) examine the link between green marketing, perceived innovation, and purchase intention, while Butt et al., (2017) explore how consumer environmental values and green brand image enhance green brand equity. Bailey, Mishra and Tihamiyu, (2016) focus on aligning marketing messages with green consumption values. Collectively, these studies offer insights for marketers to develop effective green marketing campaigns for environmentally conscious consumers. Based on this literature review, the following hypothesis is proposed:

Hypothesis 1: *Green Marketing Communication has a positive and significant influence on Environmental Attitudes.*

Brand Credibility and Environmental Attitudes

Brand credibility plays a crucial role in shaping consumer attitudes towards environmental issues and green products. Several studies have explored this relationship, highlighting how brand credibility influences environmental attitudes. Brand credibility significantly shapes consumer attitudes towards environmental issues and green products. Studies by Huang, Yang and Wang, (2014) and Cherian and Jacob, (2012) emphasize the importance of brand credibility in influencing consumer perceptions and purchase decisions. Dagher, Itani and Kassar, (2015) and Ahmad and Thyagaraj, (2015) highlight that environmental concern, knowledge, and self-expressive benefits positively impact green purchasing behavior. Bailey, Mishra and Tihamiyu, (2016). Further illustrate how brand credibility influences consumer attitudes towards green initiatives in emerging economies. Collectively, these studies underscore the pivotal role of brand credibility in promoting sustainable consumption. Based on this literature review, the following hypothesis is proposed:

Hypothesis 2: *Brand Credibility has a positive and significant influence on Environmental Attitudes.*

The Influence of Brand Credibility on Purchasing Decisions of Green Marketing Products

Green marketing communication significantly affects consumer purchasing decisions towards green products. Mukaromah, Kusuma and Anggraini, (2019) found that green marketing, brand awareness, and price perception positively influence buying decisions. Putri and Anjaningrum, (2022) revealed that the green marketing mix and consumer attitudes impact brand image and purchasing decisions, with brand image serving as a mediator. Jannah, (2023) emphasized how green products, pricing, and promotions directly influence purchasing decisions. Lauwrensia and Ariestya, (2022) demonstrated that green storytelling marketing affects purchase decisions through environmental consciousness. Abiodun, (2024) highlighted the role of ecological labeling, branding, and advertising in influencing consumer choices in Nigeria's fast-moving consumer goods sector. These studies collectively offer valuable insights into how green marketing communication impacts purchasing decisions and guide marketers in promoting sustainable consumption. Based on the reviewed literature, the following hypothesis is proposed:

Hypothesis 3: *Green Marketing Communication has a positive and significant influence on Purchasing Decisions of Green Marketing Products.*

The Influence of Brand Credibility on Purchasing Decisions of Green Marketing Products

Brand credibility significantly influences consumers' purchasing decisions for green marketing products. Kumar and [\(Kumar and Ghodeswar, 2015\)](#) emphasize the need for green marketing strategies that highlight the relevance and importance of green products to impact consumer decisions positively. [Vazifehdoust et al., \(2013\)](#) integrate the Theory of Reasoned Action with personal and marketing variables to explore factors affecting green purchase decisions. [Suhaily and Darmoyo \(2017\)](#) reveal that trust, mediated by product quality and brand image, plays a crucial role in purchase decisions. [Alamsyah, Othman and Mohammed, \(2020\)](#) focus on the impact of green advertising and brand image on consumer awareness and purchase intentions, stressing the importance of brand credibility. These studies collectively underscore the role of brand credibility in shaping purchasing decisions for green products. Based on this literature review, the following hypothesis is proposed:

Hypothesis 4: *Brand Credibility has a positive and significant influence on Purchasing Decisions of Green Marketing Products.*

The Influence of Environmental Attitudes on Purchasing Decisions of Green Marketing Products

Environmental attitudes significantly influence consumers' purchasing decisions for green marketing products. Studies show that positive environmental attitudes drive purchase intentions. [Thilinika and Gunawardana, \(2020\)](#) highlight environmental attitude as a key factor for young consumers' green product purchases. [Maichum, Parichatnon and Peng, \(2017\)](#) find that environmental consciousness, knowledge, and attitude impact purchase intentions in Thailand. [Singhal and Malik, \(2018\)](#) demonstrate that favorable environmental attitudes affect green product purchases in the cosmetic industry. [Chekima et al., \(2015\)](#) and [Visser and Dlamini, \(2021\)](#) further emphasize the role of environmental attitudes in shaping purchasing behavior, particularly for eco-friendly products. Based on this literature review, the following hypothesis is proposed:

Hypothesis 5: *Environmental Attitudes have a positive and significant influence on Purchasing Decisions of Green Marketing Products.*

The Influence of Income Level on Purchasing Decisions of Green Marketing Products

The influence of income level on purchasing decisions of green marketing products is a complex area of study that has attracted recent research attention. Several studies have explored the relationship between income and the decision to purchase green products. Income is a key factor in the purchasing decisions of green products, which are typically more expensive. Research by [Ciobanu et al., \(2022\)](#) and [Mishra and Kulshreshtha, \(2023\)](#) highlights the significant impact of income on green product purchases. [Sivaselvan, et al., \(2021\)](#) also show that price awareness and brand image, with income as a factor, significantly influence purchasing decisions. [Teng et al., \(2021\)](#) emphasize the importance of income, age, and education in non-green consumers' intention to buy green products, underscoring the role of income in shaping green purchasing behavior. In conclusion, income level plays a crucial role in influencing the purchasing decisions of green marketing products. Consumers' income levels interact with other variables such as awareness, education, and age to shape their intentions and behaviors towards green purchases. Based on the comprehensive literature review, the following hypothesis is proposed:

Hypothesis 6: *Consumer income levels positively influence the decision to purchase green marketing products.*

The Mediating Role of Environmental Attitudes on the Relationship between Green Marketing Communication and Purchasing Decisions of Green Marketing Products

Environmental attitudes are crucial in mediating the relationship between green marketing communication and consumers' purchasing decisions for green products. Studies show that environmental attitudes significantly influence this relationship. [Nekmahmud and Fekete-Farkas, \(2020\)](#) highlight how environmental concerns and green benefits impact purchase decisions. [Indriani, Rahayu and Hadiwidjojo,](#)

(2019) find that attitudes fully mediate the effect of environmental knowledge on purchase intentions. Asyhari and Yuwalliatin, (2021) support the role of brand image as a mediator in the green marketing context. These findings indicate that positive environmental attitudes, fostered by effective green marketing communication, play a significant role in driving eco-friendly purchasing decisions. Based on this literature review, the following hypothesis is proposed:

Hypothesis 7: *Environmental Attitudes mediate the relationship between Green Marketing Communication and Purchasing Decisions of Green Marketing Products.*

The Mediating Role of Environmental Attitudes on the Relationship between Brand Credibility and Purchasing Decisions of Green Marketing Products

Environmental attitudes significantly mediate the relationship between brand credibility and consumers' purchasing decisions for green marketing products. Cespedes-et al., (2021) highlight how environmental attitudes mediate the impact of brand characteristics on purchase intentions. Kumar et al., (2021) demonstrate that green brand credibility mediates the relationship between green information quality and consumer evaluations of green brands. Yang, (2024) reveals that brand image partially mediates the link between environmental concerns and purchase intentions. Duong, (2024) shows how CSR initiatives influence the mediation effect of attitudes on green purchasing behavior. Ndofirepi and Matema, (2020) provide insights into how environmental attitudes mediate the intention to repurchase environmentally friendly products. These studies underscore the pivotal role of environmental attitudes in shaping purchasing decisions and highlight the importance of enhancing brand credibility to foster eco-friendly consumer behavior. Based on this literature review, the following hypothesis is proposed:

Hypothesis 8: *Environmental Attitudes mediate the relationship between Brand Credibility and Purchasing Decisions of Green Marketing Products.*

The Moderating Role of Income Levels on the Relationship between Environmental Attitudes and Purchasing Decisions of Green Marketing Products

Income levels significantly moderate the relationship between environmental attitudes and consumers' purchasing decisions for green marketing products. Studies indicate that income influences how environmental attitudes translate into purchasing behavior. Chekima et al., (2015) highlight the moderating effects of income on the relationship between environmental factors and purchase intentions. Visser and Dlamini, (2021) show that income moderates the link between environmental attitudes and green purchasing behavior. Jog and Singhal and Malik, (2018) reveal income's role in affecting responses to environmental claims and green consumption. Astuti, (2024) demonstrates how income levels moderate the relationship between green marketing strategies and purchase intentions. Lopes, Pinho and Gomes, (2024) explores how income affects the impact of environmental attitudes on purchase decisions. These findings underscore the importance of considering income when developing strategies to promote green products. Based on this literature review, the following hypothesis is proposed:

Hypothesis 9: *Income Levels moderate the relationship between Environmental Attitudes and Purchasing Decisions of Green Marketing Products.*

Conceptual Framework

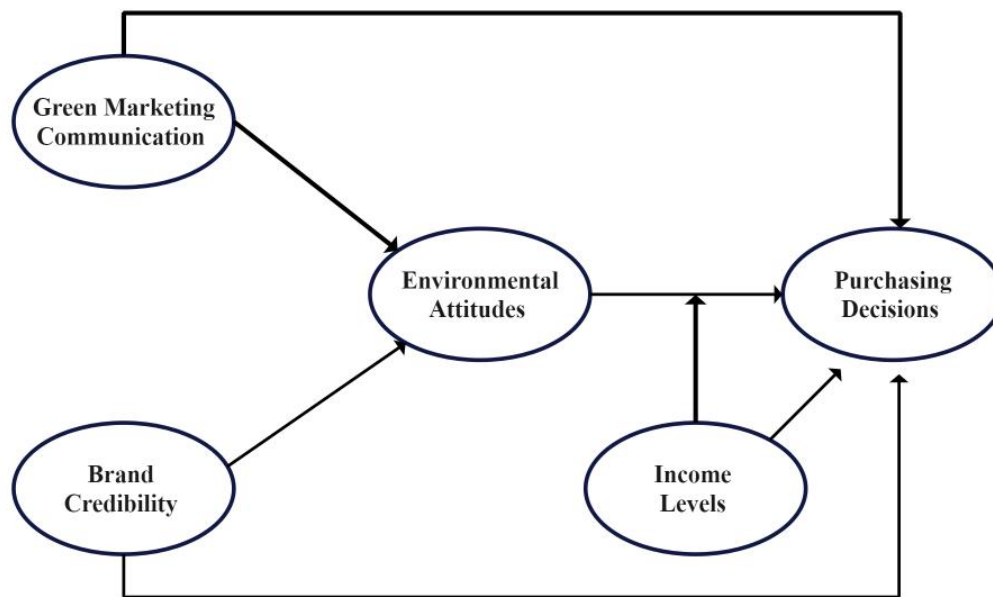


Figure 1. Conceptual Framework

Material and Method

Locations, Objects, Samples and Models

This study was conducted in the cities of Lhokseumawe, North Aceh Regency, and Bireuen-Aceh Province Indonesia, focusing on consumers of green marketing products in these three locations. It is a quantitative study using primary data obtained from questionnaires distributed to respondents. The population consists of consumers of green marketing products in North Aceh, Lhokseumawe, and Bireuen, with a sample of 300 respondents selected using Simple Random Sampling. Data collection involved planning, developing, testing, distributing, gathering, processing, and interpreting questionnaire data. The data were analyzed using Structural Equation Modeling Partial Least Squares (SEM-PLS) with Smart-PLS software, which includes the outer model stage to measure the validity and reliability of constructs, and the inner model stage to test the structural model, mediation, and moderation effects. Hypothesis testing covers direct, indirect (mediation), and moderation hypotheses, using bootstrap techniques to assess the significance of path parameters and coefficients, along with model fit evaluation using SRMR and R-square.

Measurement

To measure the variable Green Marketing Communication, using the indicators developed by Mohd Suki, (2016) which include eco-labeling, environmental advertisements, environmental public relations, and environmental sponsorships. To measure the variable Brand Credibility, using the indicators developed Foroudi, (2019), which include brand recall, brand recognition, brand familiarity, and top-of-mind awareness. To measure the variable Environmental Attitude, using the indicators developed by Yusliza et al., (2020) which include environmental concern, perceived urgency of environmental issues, attitude towards environmental conservation, and readiness to participate in environmental actions. To measure the variable Income Level, using the indicators developed by Yadav and Pathak, (2016), which include basic salary, allowances, and additional income from part-time jobs. To measure the variable Purchasing Decisions of Green Marketing Products, using the indicators developed by Joshi and Rahman, (2019), which include purchase intention of green products, frequency of green product purchases, willingness to pay a premium for green products, and preference for environmentally friendly brands

Results

Respondent Characteristics

Based on Table 1, the study sample consists of 300 respondents, predominantly male (60%). The majority are aged 18-24 years (40%), with 30% aged 25-34, 20% aged 35-44, and 10% aged 45 and above. Most are married (60%), followed by single (38.3%) and widowed/divorced (1.7%). Education levels vary, with high school graduates making up 33.3%, bachelor's degree holders 30%, and the rest distributed among other levels. Students constitute 15% of the respondents, employees 23.3%, entrepreneurs 10%, professionals 10%, and 41.7% fall under other occupations. Income levels show 33.3% earning less than Rp. 2,000,000, and regional origins include North Aceh Regency (40%), Kota Lhokseumawe (33.3%), and Bireuen Regency (26.7%).

Table 1. Respondent Characteristics

Category	Characteristic	Number	Percentage (%)
Gender	Male	180	60.0
	Female	120	40.0
Age	18-24 years	120	40.0
	25-34 years	90	30.0
	35-44 years	60	20.0
	45 years and above	30	10.0
Marital Status	Single	115	38.3
	Married	180	60.0
	Widowed/Divorced	5	1.7
Education Level	High School (SLTA)	100	33.3
	Associate Degree (D1/D2)	20	6.7
	Diploma (D3/D4)	50	16.7
	Bachelor's Degree (S1)	90	30.0
	Master's Degree (S2)	30	10.0
	Doctoral Degree (S3)	10	3.3
Occupation	Student	45	15.0
	Employee	70	23.3
	Entrepreneur	30	10.0
	Professional (Lecturer, etc.)	30	10.0
	Other	125	41.7
Income (Rupiah)	< Rp. 2,000,000	100	33.3
	Rp. 2,000,000 – Rp. 4,000,000	90	30.0
	Rp. 4,000,000 – Rp. 6,000,000	60	20.0
	> Rp. 6,000,000	50	16.7
Region of Origin	Lhokseumawe City	100	33.3
	North Aceh Regency	120	40.0
	Bireuen Regency	80	26.7

Statistics Description

Based on Table 2, the statistical descriptions reveal that all items across various categories exhibit a mean score above 4, indicating a generally positive response. The standard deviations are relatively low, suggesting consistency in the responses. Items like IL4, IL2, and PD4 show particularly high mean values, indicating strong agreement or positive perception among respondents. The variation in standard deviations, with some items like BC4 showing higher deviation, suggests more diverse responses for certain questions. Overall, the data indicates a favorable outlook with consistent responses across the measured items.

Table 2. Statistics Description

Item	Min	Max	Mean	Std. Deviations	Item	Min	Max	Mean	Std. Deviations
GMC1	1	5	4,057	0,87	IL4	1	5	4,431	0,79
GMC2	1	5	4,104	0,87	IL5	1	5	4,117	0,86
GMC3	1	5	4,144	0,85	IL6	1	5	4,385	0,78
GMC4	1	5	4,388	0,90	EA1	1	5	4,161	0,84
GMC5	1	5	4,084	0,83	EA2	1	5	3,866	0,99
GMC6	1	5	4,331	0,90	EA3	1	5	3,823	0,95
GMC7	1	5	4,033	0,85	EA4	1	5	3,943	0,89
GMC8	1	5	4,217	0,92	EA5	1	5	4,231	0,75
BC1	1	5	4,064	0,81	EA6	1	5	4,217	0,74
BC2	1	5	4,030	0,70	EA7	1	5	4,144	0,78
BC3	1	5	3,940	0,80	EA8	1	5	4,201	0,82
BC4	1	5	3,545	1,03	PD1	1	5	4,227	0,66
BC5	1	5	4,151	0,67	PD2	1	5	4,241	0,64
BC6	1	5	3,910	0,86	PD3	1	5	4,244	0,71
BC7	1	5	4,207	0,76	PD4	1	5	4,371	0,66
BC8	1	5	4,181	0,76	PD5	1	5	4,251	0,67
IL1	1	5	4,151	0,76	PD6	1	5	4,247	0,63
IL2	1	5	4,418	0,79	PD7	1	5	4,107	0,77
IL3	1	5	4,341	0,79	PD8	1	5	4,097	0,77

Measurement Model (Outer Model)

Figure 2 shows the estimated results of the measurement model. This section details key criteria such as Convergent Validity, which ensures related items correlate; Construct Reliability, which measures consistency; Average Variance Extracted (AVE), indicating the variance captured by constructs versus measurement error; and Discriminant Validity, ensuring distinct constructs. Additionally, model unidimensionality confirms that each construct is measured on a single dimension. These evaluations ensure the model's validity and reliability, supporting the research findings.

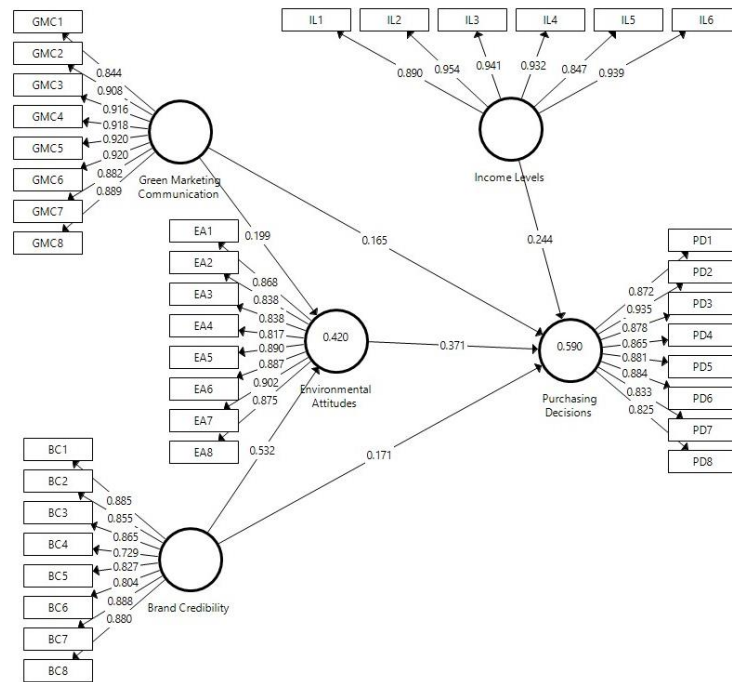


Figure 2. Estimation Results of The Measurement Model (Outer Model)

Convergent Validity

Based on Table 3, the convergent validity of the constructs is established, as indicated by the high factor loadings across all items. Brand Credibility, Environmental Attitudes, Green Marketing Communication, Income Levels, and Purchasing Decisions all show strong loadings, generally above 0.8, demonstrating that the items effectively measure their respective constructs. This high level of convergent validity supports the reliability and validity of the measurement model, ensuring that the constructs are well-represented by their items.

Table 3. Convergent Validity

Item	Brand Credibility	Item	Environmental Attitudes	Item	Green Marketing Communication	Item	Income Levels	Item	Purchasing Decisions
BC1	0,885	EA1	0,868	GMC1	0,844	IL1	0,890	PD1	0,872
BC2	0,855	EA2	0,838	GMC2	0,908	IL2	0,954	PD2	0,935
BC3	0,865	EA3	0,838	GMC3	0,916	IL3	0,941	PD3	0,878
BC4	0,729	EA4	0,817	GMC4	0,918	IL4	0,932	PD4	0,865
BC5	0,827	EA5	0,890	GMC5	0,920	IL5	0,847	PD5	0,881
BC6	0,804	EA6	0,887	GMC6	0,920	IL6	0,939	PD6	0,884
BC7	0,888	EA7	0,902	GMC7	0,882			PD7	0,833
BC8	0,880	EA8	0,875	GMC8	0,889			PD8	0,825

Construct Reliability and Validity

Based on Table 4, the constructs exhibit excellent reliability and validity. All constructs have high Cronbach's Alpha values (above 0.94), indicating strong internal consistency. The rho_A and Composite Reliability values are also high, further confirming reliability. The Average Variance Extracted (AVE) values

exceed 0.7 for all constructs, demonstrating good convergent validity. These metrics collectively affirm that the measurement model is both reliable and valid.

Table 4. Construct Reliability and Validity

Constructs	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Brand Credibility	0,941	0,945	0,951	0,711
Environmental Attitudes	0,952	0,955	0,959	0,748
Green Marketing Communication	0,966	0,968	0,971	0,810
Income Levels	0,962	0,964	0,970	0,842
Purchasing Decisions	0,955	0,958	0,962	0,761

Discriminant Validity

Based on Table 5, the Discriminant Validity results confirm that each construct is distinct. Brand Credibility, with an AVE of 0.843, has higher values than its correlations with other constructs, such as Environmental Attitudes (0.624) and Green Marketing Communication (0.462). Environmental Attitudes (AVE = 0.865) and Green Marketing Communication (AVE = 0.900) similarly exhibit higher AVE values compared to their correlations with other constructs. Income Levels (AVE = 0.918) and Purchasing Decisions (AVE = 0.872) also follow this pattern, demonstrating that each construct measures a unique aspect of the model.

Table 5. Discriminant Validity

Constructs	Brand Credibility	Environmental Attitudes	Green Marketing Communication	Income Levels	Purchasing Decisions
Brand Credibility	0,843				
Environmental Attitudes	0,624	0,865			
Green Marketing Communication	0,462	0,445	0,900		
Income Levels	0,571	0,519	0,434	0,918	
Purchasing Decisions	0,618	0,678	0,515	0,606	0,872

Model Unidimensionality

Based on Table 4, all constructs—Brand Credibility, Environmental Attitudes, Green Marketing Communication, Income Levels, and Purchasing Decisions—demonstrate high reliability and validity. Each construct shows Cronbach's Alpha and Composite Reliability values exceeding 0.70, with values ranging from 0.951 to 0.971 for Composite Reliability and from 0.711 to 0.842 for Average Variance Extracted (AVE). These metrics confirm that the measurement model is robust, and the items consistently and accurately measure their respective latent variables.

Structural Model (Inner Model)

In PLS-SEM, the Inner Model is evaluated using several key criteria: R² (Coefficient of Determination), Path Coefficients, f² (Effect Size), Q² (Predictive Relevance), and Model Fit. These metrics collectively assess the model's explanatory power, the strength of the relationships between constructs, predictive accuracy, and the overall validity of the structural model. The results of the structural model (Inner Model) are illustrated in Figure 3.

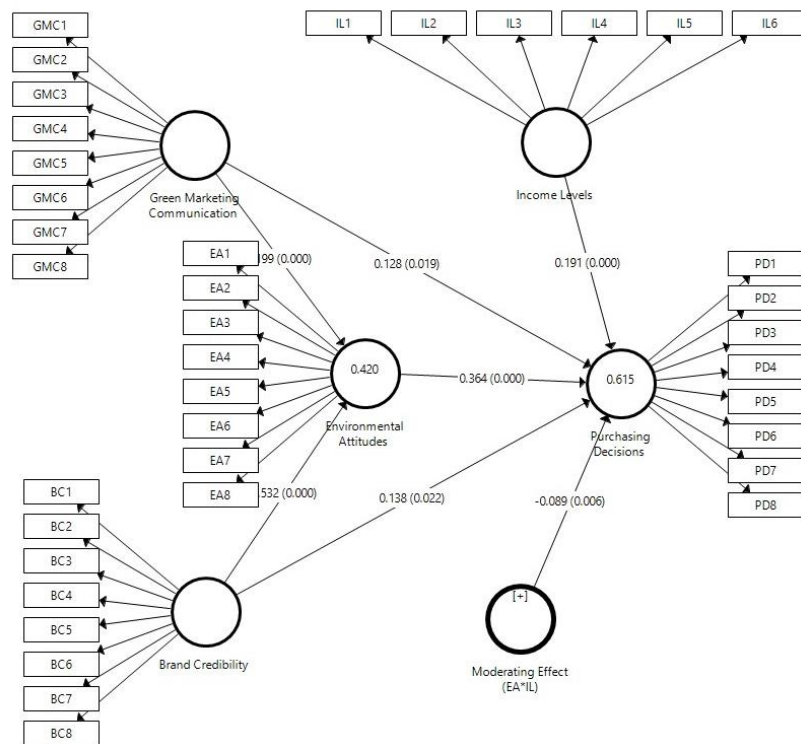


Figure 3. Estimation Results of the Structural Model (Inner Model)

Path Coefficients

Direct Effects

Based on Table 6, the direct effects reveal significant relationships between the constructs. Brand Credibility positively affects both Environmental Attitudes and Purchasing Decisions, with notable impact on Environmental Attitudes. Environmental Attitudes also positively influence Purchasing Decisions. Green Marketing Communication has a significant positive effect on both Environmental Attitudes and Purchasing Decisions. Income Levels also positively affect Purchasing Decisions. Additionally, the moderating effect of the interaction between Environmental Attitudes and Income Levels on Purchasing Decisions is significant, though it is negative.

Table 6. Direct Effect

Direct Effects	Original Sample (O)	T Statistics (O/STDEV)	P Values
Brand Credibility -> Environmental Attitudes	0,532	9,582	0,000
Brand Credibility -> Purchasing Decisions	0,138	2,302	0,022
Environmental Attitudes -> Purchasing Decisions	0,364	5,555	0,000
Green Marketing Communication -> Environmental Attitudes	0,199	3,581	0,000
Green Marketing Communication -> Purchasing Decisions	0,128	2,348	0,019
Income Levels -> Purchasing Decisions	0,191	4,382	0,000

Moderating Effect (EA*IL) -> Purchasing Decisions	-0,089	2,753	0,006
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Indirect Effects

Based on Table 7, the indirect effects indicate that Environmental Attitudes mediate the relationship between Brand Credibility and Purchasing Decisions, with a significant positive effect. Similarly, Environmental Attitudes also mediate the effect of Green Marketing Communication on Purchasing Decisions. These findings highlight the crucial mediating role of Environmental Attitudes in these relationships.

Table 7. Indirect Effects

Indirect Effect	Original Sample (O)	T Statistics (O/STDEV)	P Values
Brand Credibility -> Environmental Attitudes -> Purchasing Decisions	0,193	5,206	0,000
Green Marketing Communication -> Environmental Attitudes -> Purchasing Decisions	0,072	2,747	0,006

Total Effects

Based on Table 8, the total effects reveal significant relationships between the constructs. Brand Credibility has a strong positive effect on both Environmental Attitudes and Purchasing Decisions. Environmental Attitudes also significantly impact Purchasing Decisions. Green Marketing Communication positively affects both Environmental Attitudes and Purchasing Decisions. Income Levels positively influence Purchasing Decisions. The moderating effect of the interaction between Environmental Attitudes and Income Levels on Purchasing Decisions is significant but negative.

Table 8. Total Effects

Total Effects	Original Sample (O)	T Statistics (O/STDEV)	P Values
Brand Credibility -> Environmental Attitudes	0,532	9,582	0,000
Brand Credibility -> Purchasing Decisions	0,331	5,712	0,000
Environmental Attitudes -> Purchasing Decisions	0,364	5,555	0,000
Green Marketing Communication -> Environmental Attitudes	0,199	3,581	0,000
Green Marketing Communication -> Purchasing Decisions	0,201	3,636	0,000
Income Levels -> Purchasing Decisions	0,191	4,382	0,000
Moderating Effect (EA*IL) -> Purchasing Decisions	-0,089	2,753	0,006

R Square and R Square Adjusted

Based on Table 9, the R^2 values indicate the model's explanatory power. For Environmental Attitudes, the R^2 value is 0.420, and the R^2 Adjusted is 0.416, suggesting a good fit of the model to the data. For Purchasing Decisions, the R^2 value is 0.615, with an R^2 Adjusted of 0.609, demonstrating a strong fit and substantial explanatory power. Both R^2 and R^2 Adjusted values are statistically significant, confirming the model's effectiveness in predicting the outcomes.

Table 9. R Square and R Square Adjusted

R Square	Original Sample (O)	T Statistics (O/STDEV)	P Values
Environmental Attitudes	0,420	5,496	0,000
Purchasing Decisions	0,615	8,208	0,000
R Square Adjusted			
Environmental Attitudes	0,416	5,408	0,000
Purchasing Decisions	0,609	7,984	0,000

f² (Effect Size)

Based on Table 10, the effect sizes highlight several key relationships. Brand Credibility has a moderate effect on Environmental Attitudes, but its effect on Purchasing Decisions is minimal. Environmental Attitudes significantly impact Purchasing Decisions with a moderate effect size. Green Marketing Communication shows a small and non-significant effect on both Environmental Attitudes and Purchasing Decisions. Income Levels have a small but significant effect on Purchasing Decisions. The moderating effect of the interaction between Environmental Attitudes and Income Levels on Purchasing Decisions is also significant, though the effect size is modest.

Table 10. Effects Size

Relationship between variables	Original Sample (O)	T Statistics (O/STDEV)	P Values
Brand Credibility -> Environmental Attitudes	0,384	3,300	0,001
Brand Credibility -> Purchasing Decisions	0,025	1,081	0,280
Environmental Attitudes -> Purchasing Decisions	0,190	2,319	0,021
Green Marketing Communication -> Environmental Attitudes	0,054	1,578	0,115
Green Marketing Communication -> Purchasing Decisions	0,030	1,063	0,288
Income Levels -> Purchasing Decisions	0,054	2,128	0,034
Moderating Effect (EA*IL) -> Purchasing Decisions	0,065	2,167	0,031

Q² (Predictive Relevance)

Based on Table 11, the Q² (Predictive Relevance) values for the model indicate the predictive power of the constructs. Environmental Attitudes has a Q² value of 0.311, suggesting moderate predictive relevance. Purchasing Decisions shows a higher Q² value of 0.457, indicating strong predictive relevance. Other constructs, including Brand Credibility, Green Marketing Communication, Income Levels, and the Moderating Effect (EA*IL), do not have sufficient variation in SSE to calculate Q² values, implying they do not contribute significantly to predictive relevance in this context.

Table 11. Q² (Predictive Relevance)

Total	SSO	SSE	Q ² (=1-SSE/SSO)
Brand Credibility	2392,000	2392,000	
Environmental Attitudes	2392,000	1649,121	0,311
Green Marketing Communication	2392,000	2392,000	

Income Levels	1794,000	1794,000	
Moderating Effect (EA*IL)	299,000	299,000	
Purchasing Decisions	2392,000	1298,114	0,457

Discussion

The Impact of Brand Credibility on Environmental Attitudes

Research findings indicate that brand credibility has a positive and significant impact on environmental attitudes. This means that the higher the credibility of a brand, the more favorable consumer attitudes are towards the brand's environmental initiatives and practices due to its credibility. Studies have consistently shown that brand credibility plays a crucial role in shaping consumer perceptions. For instance, Xu, Kim and Billings, (2022) found that consumers' views on environmental initiatives can influence their attitudes, with brand credibility acting as a key mediator in this relationship. Additionally, Vikaliana et al., (2021) highlighted a positive correlation between consumer attitudes and brand credibility, further reinforcing the link between credibility and environmental attitudes. Overall, the literature consistently supports the notion that brand credibility is a major driver of environmental attitudes. The impact is that consumers are more likely to support and engage in the environmental practices promoted by brands they perceive as credible, underscoring the importance of building and maintaining credibility in brand management strategies.

The Impact of Brand Credibility on Consumers' Purchasing Decisions

Brand credibility plays a significant and positive role in influencing consumers' purchasing decisions. Several recent studies have highlighted this relationship. For instance, Djafarova and Rushworth, (2017) found that consumers are willing to trust celebrities they aspire to, considering their opinions on brands as credible, which influences purchase decisions. Similarly, Srivastava, Dey and Balaji, (2020) emphasized that brand credibility impacts various customer behaviors, including satisfaction and commitment, ultimately affecting purchasing decisions. Weismueller et al., (2020) suggested that source credibility is crucial in the purchase decision-making process and can be influenced by disclosure conditions, further supporting the importance of credibility in purchasing choices. Additionally, Windya Giri and Alfaruqi, (2023) highlighted the critical role of brand credibility in determining consumers' purchasing decisions, as they tend to opt for trustworthy and reliable brands. In conclusion, the literature consistently demonstrates that brand credibility significantly and positively influences consumers' purchasing decisions. Consumers rely on brand credibility to make informed choices, emphasizing the importance of establishing and maintaining credibility in brand management strategies.

The Impact of Environmental Attitudes on Consumers' Purchasing Decisions

Environmental attitudes have been shown to have a significant and positive impact on consumers' purchasing decisions, as supported by recent research findings. For example, Chen, Chen and Tung, 2018) highlighted that environmental attitude, product attitude, social influence, and perceived monetary value all positively influence purchase intention, with product attitude being the most influential factor. Similarly, Sharma, (2021) emphasized the positive impact of environmental concern and knowledge on the relationship between attitude and purchase intention in both European and Asian countries. Maichum, Parichatnon and Peng, (2017) found a significant effect of environmental attitude on young consumers' purchase intention towards green products. Additionally, Indriani, Rahayu and Hadiwidjojo, (2019) demonstrated a direct positive influence of environmental knowledge on green purchase intention, with attitude mediating this relationship. In conclusion, the literature consistently supports the idea that environmental attitudes play a crucial role in shaping consumers' purchasing decisions towards green products. Positive environmental attitudes, along with knowledge and concern for the environment, significantly contribute to consumers' intention to purchase environmentally friendly products. This highlights the importance of promoting and fostering pro-environmental attitudes in consumer behavior.

The Impact of Green Marketing Communication on Environmental Attitudes

Green marketing communication has been demonstrated to have a significant positive impact on environmental attitudes, influencing consumer behavior towards environmentally friendly products. Recent research consistently supports this relationship. For example, [Liao, Wu and Pham, \(2020\)](#) highlighted the moderating effects of green marketing on customers' green attitudes, values, and purchase intentions, emphasizing the importance of effective communication strategies in shaping consumer behavior towards green products. Similarly, [Correia et al., \(2023\)](#) found that green marketing communication effectively targets individuals already concerned about environmental issues, leading to positive responses and influencing green purchase behavior. Furthermore, [Simanjuntak et al., \(2023\)](#) demonstrated that green marketing and environmental concerns positively impact the intention to purchase green products, highlighting the significance of environmental care attitudes and marketing strategies in driving consumer preferences towards sustainability. In conclusion, the literature emphasizes the importance of green marketing communication in fostering positive environmental attitudes and influencing consumers' purchasing decisions towards green products. Effective green marketing strategies play a crucial role in shaping consumer perceptions, attitudes, and intentions, ultimately driving sustainable consumption behaviors and promoting environmental sustainability.

The Impact of Green Marketing Communication on Purchasing Decisions

Green marketing communication has been shown to have a significant positive impact on purchasing decisions. Recent research has highlighted the importance of green marketing communication in influencing consumers' green purchase behavior, particularly in the context of increasing environmental awareness and the growing importance of sustainability in consumer choices. Additionally, studies have found that green marketing significantly affects purchasing decisions, especially in post-pandemic travel choices, emphasizing the role of effective communication strategies in guiding consumer behavior towards environmentally friendly options [Wahyuningtiyas and Novianto, \(2022\)](#) Moreover, research has underscored the influence of green marketing communication on brand image and customers' purchase desires, emphasizing the importance of conveying environmental activities to consumers through various communication channels [Kurnia, Narda and Sitio, \(2022\)](#) Furthermore, it has been indicated that green marketing communication impacts purchasing decisions through elements such as green product and green promotion, aligning with previous research that highlighted the significant influence of the green marketing mix on consumer purchase decisions [Putri and Anjaningrum, \(2022\)](#) Overall, the literature consistently demonstrates that green marketing communication plays a crucial role in influencing consumers' purchasing decisions towards environmentally friendly products. Effective communication strategies that promote sustainability and environmental values are essential in shaping consumer behavior and driving green purchase intentions.

The Impact of Income Levels on Purchasing Decisions

Income levels have been shown to significantly and positively influence purchasing decisions. For instance, [Khanal, Adhikari and Tegegne, \(2023\)](#) found that higher household income and education levels positively affect regular purchases of fruits and vegetables. [Ullah, and Idrees, 2021\)](#) highlighted that income is a critical demographic factor impacting consumer spending, choice of retail outlets, and sales quantity, emphasizing its importance in shaping purchasing decisions. [Kaygısız, Bolat and Bulut, \(2019\)](#) noted that higher income levels increase the likelihood of purchasing organic meat, indicating income's role in influencing consumer choices for premium products. Additionally, [Berlian et al., \(2023\)](#) stressed that personal income significantly affects purchasing decisions and brand preferences, influencing overall consumer behavior and purchase intentions. Overall, the literature supports the view that income levels positively impact purchasing decisions. Higher income increases purchasing power, affecting consumer behavior, preferences, and choices. Understanding this relationship is crucial for marketers and policymakers to develop strategies that appeal to various income segments, fostering sustainable consumption and economic growth.

The Mediating Role of Environmental Attitudes on the Relationship between Green Marketing Communication and Purchasing Decisions of Green Marketing Products

Based on the data analysis, environmental attitudes mediate the relationship between brand credibility and purchasing decisions. These findings underscore the importance of environmental attitudes in linking brand credibility to purchasing decisions. A credible brand positively shapes consumer environmental attitudes, which in turn drive their purchasing choices. This suggests that companies should focus on building a credible brand image that highlights environmental responsibility to promote sustainable purchasing behaviors. This study aligns with several previous studies. Windya Giri and Alfaruqi, (2023), demonstrated that environmental attitudes mediate the relationship between brand credibility and consumers' green purchasing behavior, emphasizing the importance of environmental responsibility in purchase decisions. Winarko, Benning and Pannindriya, (2021) also found that a credible brand image enhances environmental attitudes, which subsequently influence the intention to purchase sustainable products. Haque and Rimadias, (2024) showed that income levels affect organic product purchases, with higher income levels increasing the likelihood of purchasing. Suhud, Kumaladewi and Allan, (2023) added that personal income plays a crucial role in shaping purchasing decisions and brand preferences, significantly impacting consumer behavior and purchase intentions.

The Mediating Role of Environmental Attitudes on the Relationship between Brand Credibility and Purchasing Decisions of Green Marketing Products

Environmental attitudes play a crucial role in mediating the relationship between green marketing communication and consumers' purchasing decisions. Ndofirepi and Matema, (2020) empirically tested the influence of green personality on the intention to repurchase green products, with green satisfaction and environmental attitudes mediating this relationship. Tan et al., (2022) demonstrated that consumer attitudes toward eco-friendly behavior significantly impact environmental knowledge and green product purchase intention, highlighting the mediating role of environmental attitudes in green marketing. Lauwrensia and Ariestya, (2022) emphasized that green storytelling marketing can influence purchase decisions through environmental consciousness, further supporting the mediating effect of environmental attitudes in the marketing process. Additionally, Hasanah, Riana and Toiba, (2023) found that green marketing impacts purchasing decisions and brand image, with customer satisfaction mediating the effect of green marketing on purchasing decisions. These studies collectively underscore the pivotal role of environmental attitudes in mediating the relationship between green marketing communication and consumers' purchasing decisions, emphasizing the importance of environmental consciousness in shaping sustainable consumption behaviors.

The Moderating Role of Income Levels on the Relationship between Environmental Attitudes and Purchasing Decisions of Green Marketing Products

The relationship between environmental attitudes and income levels significantly affects purchasing decisions, with a notable negative interaction. Studies have consistently shown that while environmental attitudes typically drive greener purchasing behavior, higher income levels can weaken this effect. For example, research has indicated that higher-income individuals might prioritize other factors over environmental concerns, leading to a decrease in green purchase intentions. This is evident from findings by Kim and Chung, (2011) who observed that higher income and education levels increase the regular purchase of fruits and vegetables, while Ham, Jeger and Ivković, (2015) emphasized income's pivotal role in shaping consumer spending and choice of retail outlets. Similarly, Albayrak, Aksoy and Caber, (2013) noted that higher income levels enhance the likelihood of purchasing organic meat, and Gracia and Magistris, (2013) highlighted that personal income significantly impacts brand preferences and purchasing decisions. Together, these insights suggest that while environmental attitudes are crucial for promoting sustainable consumption, higher income can sometimes diminish their influence on purchasing behavior.

Implications of This Study

Theoretical Implications

Theoretical implications suggest that environmental attitudes are a key mediator between brand credibility and purchasing decisions, as well as in the effectiveness of green marketing. This emphasizes the role of credible branding and perceived environmental responsibility in influencing consumer behavior towards sustainable products. Additionally, the impact of income levels on this relationship highlights the need to integrate socioeconomic factors into consumer behavior theories, especially for sustainable consumption and green marketing strategies.

Practical Implications

Practically, businesses should focus on building a credible brand image that highlights environmental responsibility to positively influence consumer attitudes and drive purchasing decisions. Tailoring green marketing communication to emphasize sustainability can enhance engagement with eco-friendly products. Additionally, understanding the impact of income levels on consumer behavior allows companies to adjust their marketing strategies to address different consumer segments effectively. Integrating these insights can help align marketing practices with consumer expectations and promote sustainable purchasing behaviors.

Limitation of This Study

This study's limitations include its focus on a single geographic area, Aceh, which may not fully capture the broader variations in consumer behavior and green marketing effectiveness across different regions. The sample size of 300 respondents, while sufficient, may not represent the entire population's diversity in terms of socio-economic factors, potentially affecting the generalizability of the findings. Furthermore, using SEM-PLS as the analysis method, while robust, relies on the assumptions that may not account for all possible interactions and external influences on the relationships studied. Future research should consider expanding the sample to include a broader demographic and geographic range and explore additional methods to validate the findings and address these limitations.

Conclusion

The research highlights that brand credibility significantly influences environmental attitudes and purchasing decisions, emphasizing the need for brands to build and maintain trust to foster positive consumer perceptions of environmental initiatives. Environmental attitudes play a crucial role in driving sustainable purchasing behaviors, with effective green marketing communication further shaping these attitudes and influencing consumer choices. Additionally, while higher income levels positively affect purchasing decisions, they can moderate the relationship between environmental attitudes and green purchasing behavior. These insights underline the importance of integrating credible branding, impactful green marketing strategies, and an understanding of socioeconomic factors to effectively engage consumers and promote sustainable consumption.

Credit Authorship Contribution Statement

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Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data Availability

Data will be made available on request.

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