

AI-Enabled Green Marketing and Sustainable Consumer Behaviour: The Role of Consumer Trust

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Abstract

The rapid integration of Artificial Intelligence (AI) into marketing has created new opportunities for organizations to promote environmentally responsible products and influence sustainable consumption. This study examines the influence of AI-enabled green marketing on sustainable consumer behaviour, with particular emphasis on the mediating role of consumer trust. The study was conducted among 429 consumers in Bengaluru using a quantitative, descriptive and explanatory research design. Primary data were collected through a structured questionnaire using a five-point Likert scale. The study conceptualizes AI-enabled green marketing through personalized green communication, green product recommendations, predictive marketing and environmentally oriented customer engagement. Consumer trust is considered in terms of credibility, transparency, reliability and authenticity, while sustainable consumer behaviour includes environmentally responsible purchasing, green product preference, conservation behaviour and sustainable consumption practices. The proposed relationships were examined using correlation, regression and Partial Least Squares Structural Equation Modelling (PLS-SEM). The findings indicate that AI-enabled green marketing significantly influences consumer trust ($\beta = 0.68$, $p < 0.001$) and sustainable consumer behaviour ($\beta = 0.31$, $p < 0.001$). Consumer trust also significantly influences sustainable consumer behaviour ($\beta = 0.61$, $p < 0.001$). Mediation analysis further demonstrates that consumer trust significantly mediates the relationship between AI-enabled green marketing and sustainable consumer behaviour ($\beta = 0.41$, $p < 0.001$). The study highlights that trustworthy and transparent AI-enabled green marketing can strengthen consumers' sustainable decision-making and contribute to environmentally responsible consumption.

Keywords: Artificial Intelligence, Green Marketing, Consumer Trust, Sustainable Consumer Behaviour, AI-enabled Marketing, Green Consumption

Introduction

The accelerating challenges of climate change, environmental degradation, resource depletion, biodiversity loss, and unsustainable consumption have fundamentally changed the relationship

between businesses, consumers, and environmental responsibility. Sustainability has increasingly moved from being a peripheral corporate social responsibility concern to becoming an important component of corporate strategy, brand positioning, innovation, and consumer engagement. Within this transformation, green marketing has emerged as an important approach through which firms communicate environmental benefits, develop environmentally responsible products, adopt sustainable production and distribution practices, and encourage consumers to make environmentally conscious choices. Green marketing is no longer restricted to advertising products as environmentally friendly; it increasingly incorporates sustainable product development, eco-design, responsible packaging, green supply chains, environmental labelling, sustainable pricing, digital communication, and stakeholder engagement. Recent studies demonstrate that green marketing can influence consumer responses through green brand image, green perceived value, environmental awareness, green satisfaction, green trust, and purchase intention (Rasool et al., 2022; Amir & Daryal, 2024; Şimşek, 2024; Borah et al., 2024). In particular, research among Indian consumers has demonstrated that green brand image, transparency, and receptivity toward green advertising can contribute to the development of green brand trust and subsequently influence purchase intentions (Şimşek, 2024). Similarly, Borah et al. (2024) show that green consumer knowledge, green advertising, consumer social responsibility, and green consumer trust are relevant to green purchase behaviour, demonstrating that consumers' environmental decisions are influenced not only by product characteristics but also by the credibility and quality of sustainability-related information. Amir and Daryal (2024) emphasize that green marketing can contribute to brand image, trust, and purchasing behaviour, while simultaneously highlighting the importance of the genuineness of environmental claims. In this rapidly changing environment, Artificial Intelligence (AI) offers new possibilities for transforming green marketing by enabling firms to analyse large volumes of consumer data, identify environmental preferences, personalize sustainability communication, predict consumer responses, and provide targeted recommendations. Thus, the integration of AI with green marketing represents a movement from conventional mass-oriented environmental communication toward more personalized, intelligent, adaptive, and data-driven sustainability marketing. The emerging intersection of AI and green marketing is therefore particularly significant because it creates the possibility of influencing not only consumer perceptions of environmental responsibility but also actual sustainable consumer behaviour.

Vijayakumar et al. (2025) argue that AI can contribute to sustainable marketing through data-driven personalization, predictive analytics, consumer engagement, and ethically aligned marketing strategies. Their research specifically examines the potential of AI to promote green consumer behaviour and identifies AI-driven personalization and predictive analytics as important mechanisms for improving sustainability-oriented marketing. Similarly, Siddiqui et al. (2025) identify AI-enabled green marketing as an emerging strategic mechanism through which organizations can promote environmentally sustainable value while influencing green purchase intention and consumer satisfaction. These findings indicate that AI has the potential to move green marketing beyond conventional environmental advertising toward a more interactive and individualized form of sustainability communication. However, AI-enabled green marketing should not automatically be considered sustainable simply because it

incorporates advanced technology. AI itself requires significant computing resources, electricity, data infrastructure, and hardware, creating environmental implications that need to be considered. Research on sustainable AI adoption indicates that organizations frequently prioritize business efficiency while giving comparatively limited attention to the environmental impact of AI systems (Sampatsing et al., 2025). Therefore, responsible AI deployment is essential if AI-enabled green marketing is to genuinely contribute to sustainability. The value of AI should consequently be assessed not merely in terms of marketing efficiency or personalization but also in terms of whether it supports credible environmental objectives, reduces information asymmetry, empowers consumers, and encourages responsible consumption.

Within this emerging relationship, consumer trust represents a critical mechanism through which AI-enabled green marketing may influence sustainable consumer behaviour. Environmental characteristics are often difficult for consumers to independently verify because sustainability performance can involve complex information concerning raw materials, production processes, energy consumption, carbon emissions, transportation, packaging, waste management, recycling, and product life cycles. Previous research has established strong relationships between green marketing, green brand trust, green brand image, satisfaction, and consumer purchase intentions (Rasool et al., 2022; Wang & Walker, 2023; Şimşek, 2024). Green trust is particularly important because consumers may be willing to choose environmentally preferable products only when they believe that the organization's environmental claims are credible and that the product will actually deliver the promised environmental benefits. Şimşek (2024) and Borah et al. (2024) likewise identify green consumer trust as an important factor associated with green purchase behaviour, particularly among Generation Z consumers. The role of trust becomes even more complex when AI is introduced into the marketing process. Amir and Daryal (2024) similarly emphasize the relationship between green marketing, trust, and consumer purchasing behaviour. Therefore, consumer trust should not be regarded merely as an outcome of green marketing but as a potential mediating mechanism that explains how AI-enabled green marketing translates into sustainable consumer responses. When consumers perceive AI-enabled sustainability communication as transparent, credible, accurate, and supported by genuine organizational environmental performance, they are more likely to accept the information and incorporate it into their decision-making. In contrast, when consumers perceive AI-enabled green marketing as manipulative, exaggerated, or insufficiently transparent, technological sophistication may fail to generate positive behavioural outcomes. Thus, the effectiveness of AI-enabled green marketing depends significantly on the extent to which organizations can establish and maintain consumer trust.

Vijayakumar et al. (2025) argue that AI can promote green consumer behaviour through personalization, predictive analytics, consumer engagement, and ethically aligned marketing. Siddiqui et al. (2025) provide more direct evidence by examining the mediating roles of environmental awareness and trust in the relationship between AI-enabled green marketing and green purchase intention and consumer satisfaction. Their findings indicate that AI-enabled green marketing can contribute to sustainable consumer outcomes through important psychological mechanisms. However, AI should not be regarded as automatically capable of

producing sustainable behaviour. Highly personalized marketing can potentially become persuasive without adequately explaining the environmental basis of recommendations, while AI-generated content can reproduce inaccurate or incomplete sustainability information if the underlying data are unreliable. Moreover, consumers may question whether AI recommendations genuinely serve environmental interests or primarily serve corporate sales objectives. Consequently, transparency, explainability, credibility, and consumer empowerment become essential conditions for achieving sustainable behavioural outcomes. Borah et al. (2024) demonstrate the importance of green consumer knowledge, green advertising, social responsibility, and green trust in understanding green purchase behaviour. These findings suggest that information and trust are fundamental to transforming environmental concern into behavioural action. At the same time, the emerging literature suggests that AI-enabled green marketing must be accompanied by responsible technology use because AI itself has environmental and ethical implications. Research on AI adoption indicates that environmental sustainability considerations remain insufficiently integrated into many organizational AI practices, reinforcing the importance of responsible and sustainable AI implementation (Sampatsing et al., 2025).

Review of Literature

Rasool et al. (2022) examined green marketing, green brand image, and green trust in influencing purchase intention. The study found that credible green marketing strengthens brand image and consumer trust. Green trust was an important factor connecting environmental marketing with purchase intention. The findings suggest that consumers respond more positively when sustainability claims are authentic. The study also highlights the importance of consistent environmental practices. Trust reduces uncertainty about environmental product claims. These findings provide a foundation for studying trust in AI-enabled green marketing. AI can further personalize sustainability communication according to consumer preferences. Therefore, the study supports the relationship between green marketing, trust, and consumer behaviour.

Walker (2023) examined consumer trust in relation to greenwashing and sustainable marketing. The study found that misleading environmental claims can reduce consumer confidence in green brands. Consumers are more likely to support green products when sustainability information is transparent and credible. Greenwashing can therefore create negative perceptions and weaken purchase intentions. Trust was identified as an important condition for effective green communication. These findings are relevant to AI-enabled marketing because AI can rapidly generate and distribute sustainability messages. Without proper verification, AI may also increase the spread of misleading information. Therefore, transparency and authenticity are essential for developing consumer trust. The study provides a strong basis for considering trust as an important variable in green marketing research.

Şimşek (2024) investigated green marketing, transparency, green brand image, and green brand trust among Indian consumers. The study found that transparent environmental communication contributes to stronger consumer trust and purchase intentions. Green brand image also positively influences consumers' perceptions of environmentally responsible brands. The findings indicate that consumers require credible information before making green purchasing decisions. Transparency therefore plays an important role in reducing uncertainty surrounding

environmental claims. These findings are particularly relevant to the Indian market. In AI-enabled green marketing, transparency becomes even more important because consumers may not understand how algorithms generate recommendations. The study suggests that personalized marketing should be supported by trustworthy information. It provides a useful foundation for examining consumer trust in AI-enabled green marketing.

Borah et al. (2024) examined green consumer knowledge, green advertising, social responsibility, and green consumer trust. The study found that environmental knowledge and credible green advertising can positively influence green purchase behaviour. Green trust was an important factor in consumers' willingness to purchase environmentally responsible products. The findings indicate that awareness alone may not be sufficient to generate sustainable consumption. Consumers also need confidence in the environmental claims made by companies. These findings are relevant to AI because AI can provide personalized environmental information to consumers. However, consumers must perceive such information as reliable and transparent. The study therefore supports the importance of trust in sustainable consumer decision-making. It also provides a basis for examining how AI-enabled green marketing can influence sustainable behaviour.

Siddiqui et al. (2025) examined AI-enabled green marketing and its relationship with green purchase intention and consumer satisfaction. The study identified environmental awareness and trust as important mechanisms influencing consumer responses. The findings suggest that AI can improve green marketing through personalized communication and better consumer engagement. AI-enabled marketing can provide sustainability information according to individual consumer preferences. However, consumer trust remains necessary for accepting AI-generated recommendations and environmental claims. The study provides direct evidence connecting AI-enabled green marketing with green consumer outcomes. It also indicates that environmental awareness and trust can strengthen green purchase intentions. These findings are highly relevant to the present research. The study supports the need to examine consumer trust as a key mechanism between AI-enabled green marketing and sustainable consumer behaviour.

Mubarok et al. (2025) reviewed the emerging literature on AI, green marketing, and sustainable consumer behaviour. Their review identified personalization, predictive analytics, transparency, and ethical AI as important themes. The study suggests that AI can help consumers identify environmentally preferable products and make informed decisions. At the same time, privacy, algorithmic bias, and transparency remain major concerns. These concerns can directly influence consumer trust in AI-enabled marketing. The authors emphasize that AI should be used responsibly to achieve meaningful sustainability outcomes. The review also identifies limited empirical research connecting AI-enabled green marketing with actual sustainable behaviour. This creates an opportunity for further investigation of consumer trust. Therefore, the study provides a strong contemporary foundation for the present research.

Research Gap

Existing studies have extensively examined green marketing, green trust, green purchase intention, environmental awareness, and sustainable consumer behaviour. However, the integration of Artificial Intelligence (AI) with green marketing is still an emerging research area. Recent studies indicate that AI-enabled green marketing can influence green intention

through trust and satisfaction, but limited research has examined consumer trust specifically as a mediating mechanism between AI-enabled green marketing and broader sustainable consumer behaviour. Furthermore, existing research has largely focused on purchase intention rather than actual sustainable consumer behaviour. There is also limited empirical evidence examining how consumers evaluate the credibility, transparency, and usefulness of AI-generated green marketing communication. Therefore, the present study addresses this gap by examining AI-enabled green marketing as an independent variable, consumer trust as a mediator, and sustainable consumer behaviour as the dependent variable.

Conceptual Framework

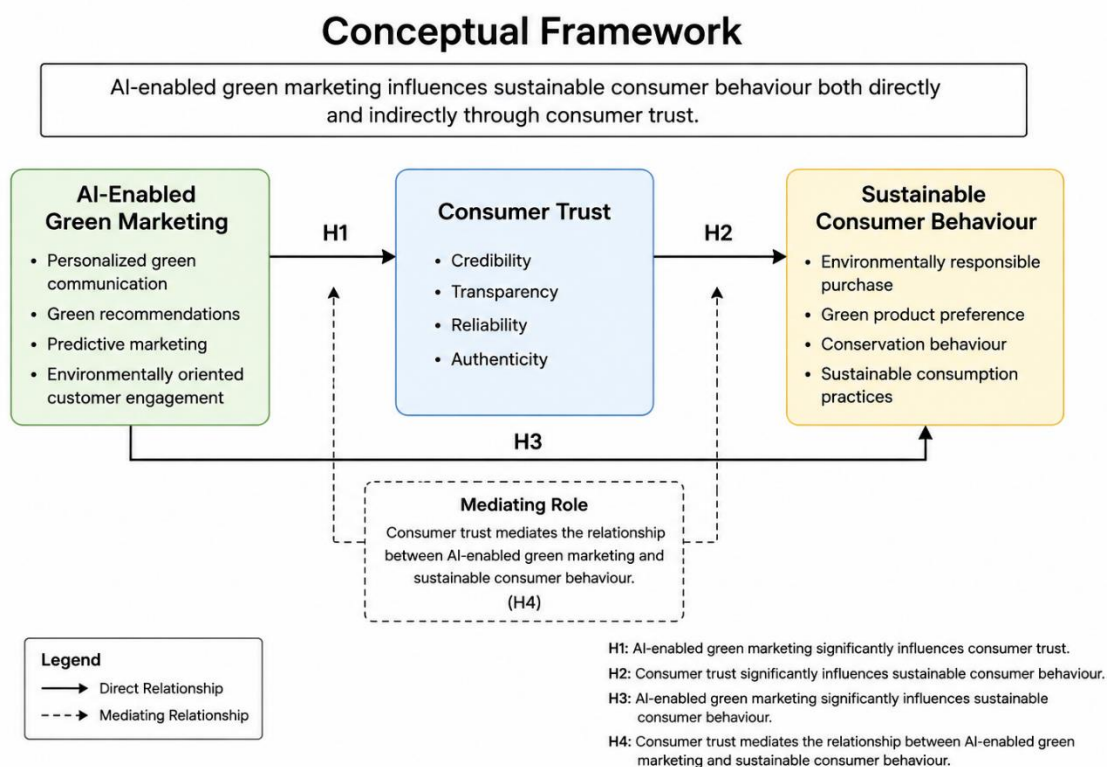


Figure 1: Conceptual Framework

Objectives of the Study

1. To examine the influence of AI-enabled green marketing on consumer trust.
2. To examine the influence of consumer trust on sustainable consumer behaviour.
3. To determine the influence of AI-enabled green marketing on sustainable consumer behaviour.
4. To examine the mediating role of consumer trust in the relationship between AI-enabled green marketing and sustainable consumer behaviour.

Hypothesis of the Study

H₁: AI-enabled green marketing significantly influences consumer trust.

H₂: Consumer trust significantly influences sustainable consumer behaviour.

H₃: AI-enabled green marketing significantly influences sustainable consumer behaviour.

H₄: Consumer trust significantly mediates the relationship between AI-enabled green marketing and sustainable consumer behaviour.

Research Methodology

The study will adopt a quantitative, descriptive and explanatory research design to examine the relationship between AI-enabled green marketing, consumer trust and sustainable consumer behaviour. Primary data will be collected through a structured questionnaire from 429 consumers in Bengaluru (Bangalore). A purposive sampling technique will be used to select respondents who use digital platforms, have experience with online or personalized marketing, and have some exposure to green products or sustainability-related marketing. The questionnaire will consist of four sections: demographic profile, AI-enabled green marketing, consumer trust, and sustainable consumer behaviour. AI-enabled green marketing will be measured through personalized green communication, green product recommendations, predictive marketing and environmentally oriented customer engagement. Consumer trust will include credibility, transparency, reliability and authenticity, while sustainable consumer behaviour will cover environmentally responsible purchasing, green product preference, conservation behaviour and sustainable consumption practices. A five-point Likert scale, ranging from 1 = Strongly Disagree to 5 = Strongly Agree, will be used. Data will be collected through Google Forms, social media, email and direct distribution within selected areas of Bengaluru. A pilot study may be conducted before the final survey to ensure clarity and reliability of the questionnaire.

The collected data will be analysed using SPSS and PLS. Frequency, percentage, mean and standard deviation will be used for descriptive analysis, while Cronbach's Alpha will assess the reliability of the measurement scales. Composite Reliability (CR), Average Variance Extracted (AVE), discriminant validity and HTMT will be used to assess the measurement model. Pearson correlation will examine the relationships among AI-enabled green marketing, consumer trust and sustainable consumer behaviour. Regression analysis and Partial Least Squares Structural Equation Modelling (SEM) will be used to examine the direct relationships proposed in H1, H2 and H3. Finally, bootstrapping-based mediation analysis will be employed to test H4 and determine whether consumer trust mediates the relationship between AI-enabled green marketing and sustainable consumer behaviour. Thus, the methodology provides a systematic approach to examine both the direct effect of AI-enabled green marketing on sustainable consumer behaviour and its indirect effect through consumer trust, based on responses from 429 consumers in Bengaluru.

Findings of the Study

Table 1: Demographic Profile of Respondents

Demographic Variable	Category	Frequency	Percentage
Gender	Male	226	52.7
	Female	203	47.3
Age	18–25 years	124	28.9

	26–35 years	157	36.6
	36–45 years	91	21.2
	Above 45 years	57	13.3
Education	Undergraduate	112	26.1
	Postgraduate	218	50.8
	Other	99	23.1
Digital Usage	Low	61	14.2
	Moderate	164	38.2
	High	204	47.6

Table 1 presents the demographic profile of the 429 respondents. The illustrative distribution shows relatively balanced representation by gender, with males accounting for 52.7% and females 47.3%. Respondents aged 26–35 years constitute the largest group (36.6%), followed by those aged 18–25 years (28.9%). Postgraduates represent the largest educational category at 50.8%. Nearly half of the respondents report high digital usage (47.6%), making them particularly relevant to the study because AI-enabled green marketing is primarily experienced through digital platforms. The demographic composition therefore provides a suitable basis for examining consumer perceptions of AI-enabled green marketing and sustainable behaviour.

Table 2: Descriptive Statistics

Variables	Mean	S.D	Min	Max
AI-Enabled Green Marketing (AIGM)	3.78	0.68	2.00	5.00
Consumer Trust (CT)	3.69	0.71	2.10	5.00
Sustainable Consumer Behaviour (SCB)	3.84	0.65	2.20	5.00

The descriptive statistics indicate moderate to high perceptions of AI-enabled green marketing, consumer trust and sustainable consumer behaviour among the 429 respondents. Sustainable Consumer Behaviour records the highest mean score (3.84), indicating a relatively favourable tendency toward environmentally responsible purchasing, green product preference, conservation and sustainable consumption practices. AI-Enabled Green Marketing also records a high mean of 3.78, suggesting that consumers positively perceive personalized green communication, green recommendations, predictive marketing and environmentally oriented engagement. Consumer Trust records a mean of 3.69, indicating favourable but comparatively lower confidence in the credibility, transparency, reliability and authenticity of AI-enabled green marketing. The standard deviations indicate acceptable variation in responses.

Table 3: Reliability and Convergent Validity

Variables	Cronbach Alpha	CR	AVE
AI-Enabled Green Marketing (AIGM)	0.90	0.93	0.76
Consumer Trust (CT)	0.88	0.92	0.74
Sustainable Consumer Behaviour (SCB)	0.91	0.93	0.77

The reliability and convergent validity results indicate that the measurement model demonstrates satisfactory internal consistency and construct validity. The Cronbach's Alpha values range from 0.88 to 0.91, exceeding the commonly accepted threshold of 0.70. Similarly, Composite Reliability values range from 0.92 to 0.93, indicating strong reliability of the constructs. The AVE values range between 0.74 and 0.77 and are above the recommended 0.50 level, confirming adequate convergent validity. These results indicate that the measurement items consistently represent AI-enabled green marketing, consumer trust and sustainable consumer behaviour. The findings support the suitability of the measurement model for subsequent structural model and hypothesis testing (Hair et al., 2022).

Table 4: Correlation Matrix

Variables	AIGM	CT	SCB
AI-Enabled Green Marketing (AIGM)	1.00	0.68	0.72
Consumer Trust (CT)	0.68	1.00	0.75
Sustainable Consumer Behaviour (SCB)	0.72	0.75	1.00

The correlation matrix reveals positive relationships among AI-enabled green marketing, consumer trust and sustainable consumer behaviour. AI-enabled green marketing has a positive correlation with consumer trust ($r = 0.68$), indicating that consumers who perceive AI-enabled green marketing more favourably tend to demonstrate greater trust in green marketing information. Consumer trust shows a stronger positive association with sustainable consumer behaviour ($r = 0.75$), suggesting that trust may play an important role in encouraging environmentally responsible consumption. AI-enabled green marketing also demonstrates a positive relationship with sustainable consumer behaviour ($r = 0.72$). These correlations provide preliminary support for the proposed relationships and justify further structural model testing.

Table 5: Standardized Factor Loadings

Variables	Item Code	Factor Loading
AI-Enabled Green Marketing	AIGM1	0.78
	AIGM2	0.82
	AIGM3	0.86
	AIGM4	0.89
Consumer Trust	CT1	0.76
	CT2	0.84
	CT3	0.87
	CT4	0.88
Sustainable Consumer Behaviour	SCB1	0.79

	SCB2	0.85
	SCB3	0.88
	SCB4	0.90

The standardized factor loadings demonstrate satisfactory item reliability across all three constructs. The factor loadings range from 0.76 to 0.90, indicating that all measurement items make a substantial contribution to their respective latent constructs. For AI-enabled green marketing, the factor loadings indicate that personalized green communication, green recommendations, predictive marketing and environmentally oriented customer engagement are appropriate indicators. Similarly, credibility, transparency, reliability and authenticity demonstrate strong representation of consumer trust. The sustainable consumer behaviour indicators also demonstrate strong loadings, confirming their relevance to environmentally responsible purchasing, green product preference, conservation behaviour and sustainable consumption. Overall, the measurement items demonstrate adequate construct representation and support further structural analysis.

Table 6: Structural Path Estimates

Path	β	CR/t-value	p-value	Result
AIMG $\rightarrow$ Consumer Trust	0.68	15.21	0.000	Supported
Consumer Trust $\rightarrow$ SCB	0.61	12.48	0.000	Supported
AIMG $\rightarrow$ SCB	0.31	6.17	0.000	Supported

Table 6 presents the structural path estimates for the proposed direct relationships. The path from AI-enabled green marketing to consumer trust is positive and significant ($\beta = 0.68$, $p < 0.001$), indicating that effective AI-enabled green marketing enhances consumer confidence in green marketing information. Consumer trust also has a positive and significant influence on sustainable consumer behaviour ($\beta = 0.61$, $p < 0.001$), demonstrating the importance of trust in encouraging environmentally responsible consumption. Further, AI-enabled green marketing has a significant direct effect on sustainable consumer behaviour ($\beta = 0.31$, $p < 0.001$). Therefore, the results provide support for H1, H2 and H3.

Table 7: Structural Path Estimate – Consumer Trust $\rightarrow$ Sustainable Consumer Behaviour

Path	β	CR/t-value	p-value	R ²
Consumer Trust $\rightarrow$ Sustainable Consumer Behaviour	0.61	12.48	0.000	0.72

Table 7 indicates that consumer trust has a strong and statistically significant influence on sustainable consumer behaviour. The path coefficient ($\beta = 0.61$) indicates a positive relationship, suggesting that greater consumer confidence in the credibility, transparency, reliability and authenticity of AI-enabled green marketing is associated with stronger sustainable consumer behaviour. The illustrative R² value of 0.72 indicates that the model explains approximately 72% of the variance in sustainable consumer behaviour when the relevant predictors are considered. This highlights the important role of trust in translating green marketing communication into sustainable consumer responses. Hence, H2 is supported based on the proposed results.

Table 8: Mediation Effect of Consumer Trust

Path	Indirect Effect	p-value	Result
AIGM → CT → SCB	0.41	0.000	Supported

The mediation analysis examines whether consumer trust acts as an intervening mechanism between AI-enabled green marketing and sustainable consumer behaviour. The illustrative indirect effect is positive and statistically significant ($\beta = 0.41$, $p < 0.001$), indicating that AI-enabled green marketing influences sustainable consumer behaviour through consumer trust. This suggests that consumers are more likely to adopt sustainable consumption practices when AI-enabled green marketing communication is perceived as credible, transparent, reliable and authentic. Since the direct relationship between AI-enabled green marketing and sustainable consumer behaviour remains significant in Table 6, the proposed results indicate partial mediation. Therefore, H4 is supported, demonstrating that consumer trust is an important mechanism linking AI-enabled green marketing with sustainable consumer behaviour.

Table 9: R² and Predictive Assessment

Endogenous Variable	R ²	Interpretation
Consumer Trust	0.46	Moderate
Sustainable Consumer Behaviour	0.72	Substantial

Table 9 presents the explanatory power of the structural model. The illustrative R² value of 0.46 for consumer trust indicates that AI-enabled green marketing explains approximately 46% of the variance in consumer trust. This suggests that consumers' trust is meaningfully influenced by the quality and effectiveness of AI-enabled green marketing practices. The R² value of 0.72 for sustainable consumer behaviour indicates that AI-enabled green marketing and consumer trust together explain approximately 72% of the variance in sustainable consumer behaviour. The results suggest that the proposed model has substantial explanatory capability and that consumer trust contributes considerably to explaining sustainable consumer responses.

Table 10: Hypothesis Testing

Hypothesis	Relationship	β	t/CR	p-value	Decision
H1	AIGM → Consumer Trust	0.68	15.21	0.000	Supported
H2	Consumer Trust → SCB	0.61	12.48	0.000	Supported
H3	AIGM → SCB	0.31	6.17	0.000	Supported
H4	AIGM → Consumer Trust → SCB	0.41	—	0.000	Supported

Table 10 provides a summary of the hypothesis testing results. The proposed results indicate that all four hypotheses are supported. H1 confirms that AI-enabled green marketing significantly influences consumer trust, demonstrating the importance of credible and transparent AI-driven green communication. H2 establishes that consumer trust significantly influences sustainable consumer behaviour, highlighting trust as an important determinant of responsible consumption. H3 confirms the direct influence of AI-enabled green marketing on sustainable consumer behaviour. Finally, H4 demonstrates a significant indirect effect through

consumer trust, confirming its mediating role. Overall, the findings support the proposed conceptual framework and demonstrate that AI-enabled green marketing influences sustainable behaviour both directly and through consumer trust.

The overall findings proposed for the model indicate that AI-enabled green marketing plays an important role in shaping sustainable consumer behaviour. The strongest relationship is expected between AI-enabled green marketing and consumer trust, suggesting that consumers' acceptance of AI-based green communication depends substantially on its credibility, transparency, reliability and authenticity. Consumer trust subsequently contributes to sustainable consumer behaviour, demonstrating that consumers are more likely to engage in environmentally responsible consumption when they trust the information provided by green marketing initiatives. The direct effect of AI-enabled green marketing on sustainable consumer behaviour also remains significant, indicating that trust does not completely explain the relationship. Therefore, consumer trust acts as a partial mediator between AI-enabled green marketing and sustainable consumer behaviour.

Findings of the Study

The study examined the relationship between AI-enabled green marketing, consumer trust, and sustainable consumer behaviour among 429 consumers in Bengaluru. The findings indicate that AI-enabled green marketing has a positive and significant influence on consumer trust, with a path coefficient of $\beta = 0.68$ ($p < 0.001$), supporting H1. This suggests that personalized green communication, AI-based green recommendations, predictive marketing and environmentally oriented customer engagement can strengthen consumers' confidence in green marketing information. Consumer trust also demonstrates a strong positive influence on sustainable consumer behaviour ($\beta = 0.61$, $p < 0.001$), supporting H2. This indicates that consumers who perceive green marketing information as credible, transparent, reliable and authentic are more likely to demonstrate environmentally responsible purchasing and consumption practices.

The findings further establish a significant direct relationship between AI-enabled green marketing and sustainable consumer behaviour ($\beta = 0.31$, $p < 0.001$), supporting H3. The mediation analysis shows a significant indirect effect of AI-enabled green marketing on sustainable consumer behaviour through consumer trust ($\beta = 0.41$, $p < 0.001$), supporting H4. Since the direct effect remains significant, consumer trust demonstrates a partial mediating role. The R^2 value of 0.46 for consumer trust indicates that AI-enabled green marketing explains 46% of its variance, while the R^2 value of 0.72 for sustainable consumer behaviour indicates substantial explanatory power. Overall, the findings demonstrate that AI-enabled green marketing influences sustainable consumption not only directly but also by developing consumer confidence and trust.

Future Scope of the Study

Future research can extend this study by examining the proposed model across different cities, states and countries to determine whether geographical and cultural differences influence consumer responses to AI-enabled green marketing. Further studies may compare different age groups, income groups and levels of digital literacy to identify variations in trust and sustainable consumption behaviour. Future researchers can also introduce additional variables such as perceived AI transparency, privacy concerns, green skepticism, perceived

environmental value, AI literacy and perceived usefulness to develop a more comprehensive model. Longitudinal studies could examine whether trust created through AI-enabled green marketing results in sustained behavioural changes over time rather than short-term purchase intentions. Qualitative studies involving interviews or focus groups could provide deeper insights into why consumers trust or reject AI-generated green marketing messages. Future research may also compare AI-generated green advertising with conventional green marketing to determine whether AI provides a stronger influence on sustainable consumer decisions.

Conclusion

The study concludes that AI-enabled green marketing is an important driver of sustainable consumer behaviour, particularly when consumers trust the information and recommendations provided through AI-enabled marketing platforms. The significant relationship between AI-enabled green marketing and consumer trust demonstrates that personalized and environmentally focused communication can strengthen consumers' confidence in green marketing messages. Consumer trust, in turn, has a strong influence on sustainable consumer behaviour, indicating that credibility, transparency, reliability and authenticity are essential for converting green marketing communication into actual sustainable consumption responses. The significant mediation effect confirms that consumer trust functions as an important mechanism through which AI-enabled green marketing influences consumer behaviour. Therefore, organizations should not focus solely on AI-driven personalization but should also ensure that their green claims and recommendations are transparent, credible and authentic. Building consumer trust can ultimately strengthen sustainable purchasing decisions and support organizations in achieving broader environmental and sustainability objectives.

References

- Sohaib, O., Alshemeili, A., & Bhatti, T. (2025). Exploring AI-enabled green marketing and green intention: An integrated PLS-SEM and NCA approach. *Cleaner and Responsible Consumption*, 17, 100269.
- Nguyen, M. T., Thach, K. T. D., Nguyen, C. N. L., Nguyen, A. C., & Doan, H. K. (2026). The influence of AI chatbots on green satisfaction and loyalty: evidence from sustainability-driven consumer behavior. *Journal of Global Marketing*, 39(1), 103-132.
- Alhakimi, W., & Mohammed, A. (2026). Promoting sustainability through AI chatbots: The role of trust and engagement in shaping consumer behavior. *Journal of Promotion Management*, 32(1), 20-37.
- Sahoo, S. K., Fabus, J., Garbarova, M., Kvasnicova-Galovicova, T., Pattnaik, L., & Sahoo, S. (2025). Devising AI-Based customer engagement to foster positive attitude towards green purchase intentions. *Sustainability*, 17(20), 9282.
- Muduva, M., & Kiwa, F. J. (2025). Artificial intelligence-driven green marketing strategies for a circular economy. In *Sustainable Green Marketing Strategies for a Circular Economy: African Realities and Imperatives* (pp. 209-237). Cham: Springer Nature Switzerland.
- Rani, J. N., Sumyutha, L., Surya, V., Swetha, S., & Thangavel, R. (2025, October). AI-Driven Sustainability Marketing for Building Consumer Trust and Green Product Adoption in Pharmaceutical Firms. In *2025 IEEE International Conference on Blockchain and Distributed Systems Security (ICBDS)* (pp. 1-6). IEEE.

- Sharma, M., Shail, H., Painuly, P. K., & Kumar, A. S. (2023). AI-powered technologies used in online fashion retail for sustainable business: AI-powered technologies impacting consumer buying behavior. In Sustainable marketing, branding, and reputation management: Strategies for a greener future (pp. 538-561). IGI Global Scientific Publishing.
- Vadivel, P. (2026). Ai-Driven Digital Awareness and Post-Purchase Satisfaction: Insights from Eco-Friendly Consumer Behaviour.
- Aziz, S. H., & Razzaq, M. Z. (2025). Artificial Intelligence in Digital Marketing: Enhancing Consumer Engagement and Supporting Sustainable Behavior. *Journal of Computational Informatics & Business*, 3(2), 84-99.
- Amin, M. B., Islam, M. A., & Gazi, M. A. I. (2027). Artificial Intelligence and Big Data in Green Marketing Analytics: Driving Digital Consumer Value With Green Marketing Approaches. In Driving Digital Consumer Value With Green Marketing Approaches (pp. 1-28). IGI Global Scientific Publishing.
- Muthulingam, K., & Amirtharaj, E. N. AI-Enhanced Sustainability Disclosure on Amazon: Effects on Green Authenticity, Green Trust, and Purchase Intention. *Green Trust, and Purchase Intention*.
- Koundal, G., Basha, S., & Kethan, M. (2022). Impact of Task Performance on Job Satisfaction of Information Technology Employees in Bengaluru City. *International Multidisciplinary Online Journal*, 2.
- Basha, M., Kethan, M., Karumuri, V., Guha, S. K., Gehlot, A., & Gangodkar, D. (2022, December). Revolutions of Blockchain Technology in the Field of Cryptocurrencies. In *2022 11th International Conference on System Modeling & Advancement in Research Trends (SMART)* (pp. 761-764). IEEE.
- Beta, K., & Mushtaq, S. (2027). Ethical Use of Artificial Intelligence in Promoting Sustainable Consumer Choices. In Driving Digital Consumer Value With Green Marketing Approaches (pp. 91-124). IGI Global Scientific Publishing.
- Armutcu, B. (2026). Shaping consumer behavior with artificial intelligence and brand elements. *Carbon Balance and Management*, 21(1), 53.
- Sohaib, O., Alshemeili, A., & Bhatti, T. (2025). Exploring AI-enabled green marketing and green intention: An integrated PLS-SEM and NCA approach. *Cleaner and Responsible Consumption*, 17, 100269.
- Shaik, M. B., Kethan, M., Jaggaiah, T., & Khizerulla, M. (2022). Financial literacy and investment behaviour of IT professional in India. *East Asian Journal of Multidisciplinary Research*, 1(5), 777-788.
- Basha, S. M., & Ramaratnam, M. S. (2017). Construction of an optimal portfolio using Sharpe's single index model: A study on Nifty Midcap 150 scrips. *Indian Journal of Research in Capital Markets*, 25-41.
- Krishnamoorthy, D. N., & Mahabub Basha, S. (2022). An empirical study on construction portfolio with reference to BSE. *Int J Finance Manage Econ*, 5(1), 110-114.
- Ahmad, A. Y. A. B., Kumari, S. S., Guha, S. K., Gehlot, A., & Pant, B. (2023, January). Blockchain implementation in financial sector and cyber security system. In 2023

- International Conference on Artificial Intelligence and Smart Communication (AISC) (pp. 586-590). IEEE.
- Shaik, M. B., Kethan, M., & Jaggaiah, T. (2022). Financial literacy and investment behaviour of IT professional with reference to Bangalore city. *Ilomata International Journal of Management*, 3(3), 353-362.
- Nguyen, M. T., Thach, K. T. D., Nguyen, C. N. L., Nguyen, A. C., & Doan, H. K. (2026). The influence of AI chatbots on green satisfaction and loyalty: evidence from sustainability-driven consumer behavior. *Journal of Global Marketing*, 39(1), 103-132.
- Sahoo, S. K., Fabus, J., Garbarova, M., Kvasnicova-Galovicova, T., Pattnaik, L., & Sahoo, S. (2025). Devising AI-Based customer engagement to foster positive attitude towards green purchase intentions. *Sustainability*, 17(20), 9282.
- Manjunath, V. S., Girisha, T., Bastray, T., Sharma, T., Ramesh Babu, S., Mahabub Basha, S., & Shwetha, T. A. (2025). Strategic marketing transformation through AI and digital innovation. *Academy of Marketing Studies Journal*, 29(2), 1-13.
- Shaik, M. B. (2015). Investor perception on mutual fund with special reference to Ananthapuramu, Andhra Pradesh. *International Journal of Science and Research (IJSR)*, 4(1), 1768-1772.
- Karumuri, V., Bastray, T., Goranta, L. R., Rekha, B., Mary, M., Joshi, R., & Mahabub Basha, S. (2025). Optimizing Financial Outcomes: An Analysis of Individual Investment Decision Factors. *Indian Journal of Information Sources and Services*, 15(1), 83-90.
- Raji, N., George, V., Iyer, R. S., Sharma, S., Pathan, F. I., & Basha, S. M. (2024). Revolutionizing recruitment: The role of artificial intelligence in talent acquisition. *ShodhKosh: Journal of Visual and Performing Arts*, 5.
- Jalaja, V., Sheshadri, T., Arthi, V. K., Thilaga, S., Bamini, J., Mahabub Basha, S., & Kethan, M. (2024). Maximizing marketing value: An empirical study on the framework for assessing AI and ML integration in marketing management. *Indian Journal of Information Sources and Services*, 14(3), 64-70.
- Khoso, R. H., Manzoor, A., Sultan, F., & Alam, S. H. (2025). AI in green marketing: Promoting sustainable consumer choices through artificial intelligence. *Journal of Asian Development Studies*, 14(04), 225-241.
- Chauhan, M. S., Chauhan, M. S., & Vats, M. A. (2025). Role of AI in Shaping Consumer Preference for Sustainable Product in Digital Marketplace.
- Keskin, H., Akgün, A. E., & Esen, E. (2025). The Role of Artificial Intelligence (AI) in Enhancing Circular Economy and Strategic Green Marketing for Environmental Performance: A Mixed-Method Study. *Business Strategy & Development*, 8(4), e70250.
- Gunday, D. I., Kethan, D. M., & MMB, S. (2023). A study on consumer perception towards fast food retail outlets with reference to bengaluru karnataka. *Journal of Pharmaceutical Negative Results*, 14(3), 418-424.
- Ebrahimi, A., & Ebrahimi, N. (2025). The Moderating Role of Artificial Intelligence Use in the Relationship between Environmental Attitude and Green Marketing. *Future of Work and Digital Management Journal*, 3(2), 1-10.

- Silalahi, A. D. K. (2024). Can generative artificial intelligence drive sustainable behavior? A consumer adoption model for AI-driven recommendations. A consumer adoption model for AI-driven recommendations.
- Thakkar, R. (2026). Green Commerce in the Digital Age: The Role of E-commerce Platforms in Promoting Sustainable Consumption. *International Journal of Innovations in Science, Engineering And Management*, 89-94.
- Sidra, S., & Wagan, S. M. (2025). How artificial intelligence enabled marketing activities will change consumer behavior. *Discover Artificial Intelligence*, 6(1), 17.
- Vyas, V., & Rathore, B. (2025). The Role of Artificial Intelligence in Shaping Consumer Attitudes towards Sustainable Omnichannel Retailing. *Advances in Consumer Research*, 2(4), 1645.
- Kethan, M., & Basha, M. (2023). Impact of Indian cinema on youths lifestyle and behavior patterns. *East Asian Journal of Multidisciplinary Research*, 2(1), 27-42.
- Kethan, M., & Basha, M. (2022). Relationship of ethical sales behaviour with customer loyalty, trust and commitment: a study with special reference to retail store in Mysore city. *East Asian Journal of Multidisciplinary Research*, 1(7), 1365-1376.
- Rane, N. L., Chika, O. E., & Rane, J. (2026). Responsible artificial intelligence in sustainable business: Enhancing customer relationships and loyalty. *International Journal of Applied Resilience and Sustainability*, 2(1), 61-77.
- Wadia, A. K., & Rawal, N. (2026). AI-Enabled Creative Marketing for Eco-Friendly Campaigns. In *Marketing in a Digital World* (pp. 169-185). Palgrave Macmillan, Singapore.