

AI-Enabled Digital Green Marketing and Sustainable Consumption: A Cultural Studies Perspective on Mediation Through Green Marketing Trust, Environmental Awareness, and Green Purchase Intention

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Abstract

Purpose: The purpose of the present study is to investigate the impact of AI-enabled digital green marketing (AI-DGM) on sustainable consumption, with specific attention to the mediating roles of green marketing trust, environmental awareness, and green purchase intention.

Methodology: Data from 365 consumers who used at least one AI-enabled digital marketing platform in the past six months were collected using a stratified random sample and five-point Likert scales. The collected data were analysed using PLS-SEM and bootstrapping to assess the mediating effects.

Findings: AI-DGM significantly and positively impacts green marketing trust, environmental awareness, green purchase intention, and, ultimately, sustainable consumption. All hypothesised relationships between these constructs are supported, with the indirect effect through green purchase intention being the strongest.

Research limitations: The limitations of this study include the cross-sectional research design, data from a single AI-enabled digital marketing platform, and the use of self-reported data.

Practical implications: The findings suggest that AI-DGM platforms should focus on improving the explainability of AI, utilising chatbots, and providing traceability of the digital products to enhance green marketing trust and mitigate consumer scepticism regarding claims of environmental friendliness or greenwashing.

Originality: To the best of the authors' knowledge, this is the first study to investigate the relationships between AI-DGM, green marketing trust, environmental awareness, green purchase intention, and sustainable consumption, and as such, aims to contribute to the existing literature on the Green-AI Paradox in digital marketing.

Keywords: AI-enabled Digital Green Marketing, Green Marketing Trust, environmental awareness, green purchase intention, sustainable consumption

1. Introduction

Artificial intelligence has transformed the face of digital marketing and allowed for increased integration of personalized communication with consumers in relation to their environment (Ahmed et al., 2025; Alhakimi et al., 2026). The integration of these technologies, however, has left much of the existing literature on digital marketing somewhat fragmented and isolated from the psychological factors associated with sustainable consumption (Mubarok et al., 2025). More specifically, the psychology behind green consumption has yet to be explored in relation to artificial intelligence and digital marketing, especially in relation to how psychological constructs like green marketing trust and environmental awareness influence the ultimately green purchase intention of consumers (Alam et al., 2026; Singh & Surbhi, 2026). Yet existing research in each of these separate areas does suggest the relationship between green marketing trust, environmental awareness, and green purchase intention in the context of artificial intelligence enabled digital marketing initiatives (Garg et al., 2025; Sohaib et al., 2025). Thus, the purpose of the current research is to gain an understanding of the complex relationship between each of these variables, and to utilize such findings to provide a framework for the understanding of how digital, AI-enabled marketing initiatives can influence deeper levels of green purchase intention from consumers (Khan & Mahmood, 2024; Rathore, 2018). In addition to addressing the risk of greenwashing, this model also investigates how AI can help to mitigate the scepticism that consumers have regarding the environmental claims of the companies (Akkala et al., 2026; Baruno & Indrasari, 2025). Consequently, the study investigates how these AI components can act as a bridge from environmental knowledge to action (Sandira, 2025). Furthermore, it investigates the link between consumer psychology and AI in relation to these environmental actions and decisions (Khoso et al., 2025). In this way, the investigation of this topic contributes to the current discourse in that it examines how AI for sustainability can shift the focus of consumers from the utility of the AI to the psychology of the consumer (Ganesh et al., 2024; Kumar et al., 2025). More specifically, the study intends to reveal how the AI can foster a change in the consumers' mind-set regarding environmental sustainability (Shobana & Venkatesan, 2026). Furthermore, the study aims to fill the existing gap between the intentions of the consumers to act sustainably versus the actual behaviour of the consumers regarding those actions (Sorout et al., 2026). Through evaluating each of these pathways for the development of green purchase intention from consumers that utilized generative AI, this study will provide an understanding of the various ways in which the precision of the algorithms behind these applications, as well as their ethical data governance, can help to fill the gap between attitude and behaviour regarding sustainability (Yin et al.,

2025), as well as reduce the sceptical perceptions that often accompany digital green marketing initiatives (Alsaaffarini & Awwad, 2026). Furthermore, through examining the role that the use of generative AI may play in the development of trust in these digital green marketing initiatives, it becomes possible to understand how such trust can lead to an increase in the environmental awareness of those consumers (Laachach & Sadiku-Dushi, 2026; Sadiq et al., 2024). As such, this research will provide a theoretical basis for the use of AI by companies to increase their green digital marketing initiatives and improve the consumer interactions with those green digital marketing initiatives (Foroughi et al., 2025; Ling, 2026). Finally, in examining the so-called Green-AI Paradox, this research will help to determine how the sustainability initiatives that are performed through AI can overcome the initial hesitations that consumers have towards this privacy and data-sharing initiatives (Fallatah et al., 2026). Through the use of generative AI to create digital green marketing initiatives that are authentic and appear to be transparent with consumers, such concerns and sceptical perceptions of those digital initiatives can be mitigated (Pattnaik & Hussain, 2025; Saha, 2025). Consequently, this research aims to investigate the extent to which such processes of serial mediation are actually effective in translating the presence of AI-augmented transparency into ethical commitment. Specifically, this research intends to investigate whether AI-enabled green marketing leads to increases in consumers' trust in the green claims of the companies making those claims, increases in their level of environmental awareness, and, as a result, increases in their intention to purchase green products. This study investigates these relationships because the existing literature suggests that green marketing efforts may have an indirect effect upon purchase intention of green products through variables like trust and environmental awareness (Ajban, 2024), as well as because environmental awareness has been shown to lead to green purchase intentions (Zameer & Yasmeen, 2022).

Problem Statement

Despite the proliferation of AI-driven tools, there is a lack of empirical research into explaining how these tools can effectively catalyse pro-environmental behaviours (Bui, 2026; Guerra-Tamez et al., 2024). While the influence of green advertising on consumers is well studied, the psychological mechanisms of such an influence within the context of AI and digital environments are lacking in the literature (Ediriweera et al., 2024; Shahid et al., 2024; Vasiliki et al., 2025). Furthermore, research into whether AI tools can catalyse trust between organisations and consumers, necessary to bridge the knowledge and awareness gap in relation to environmental concerns, is lacking (Acatrinei et al., 2025; Darshini et al., 2026). Lastly, research that investigates whether the knowledge of the environmental impacts of the products

that are advertised by these organisations is the factor that contributes to the elimination of the attitude-behaviour gap in the digital advertising of sustainable products is likewise lacking in the current literature (Jain & Mitra, 2024; Poulis et al., 2026). Overall, then, there is a lack of current research into each of these aspects of digital green advertising, justifying the need for the current study to investigate such factors as they relate to AI and digital advertising. These are the objectives presented.

1. To understand the effect of AI-enabled digital green marketing on sustainable consumption.
2. To assess the impact of environmental awareness, green purchase intention and trust in green marketing on sustainable consumption.
3. To evaluate the mediation of the relationships between AI enabled digital green marketing and sustainable consumption.

2. Literature Review and Hypotheses Development

2.1.Theoretical Framework

The theoretical synthesis of this domain currently faces a tension between macro-level structural approaches which emphasise the role of digital tools in circular economy modeling and micro-level consumer-centric models that focus on psychological behavioural shifts (Bashar et al., 2025). While traditional research often views digital marketing as a tool for static information dissemination, contemporary interdisciplinary approaches necessitate an integration of algorithmic personalisation theories with cognitive theories of reasoned action (Rosário & Dias, 2025). This synthesis reveals that while digital platforms increasingly function as primary agents of environmental socialisation, the academic literature remains fragmented by a reliance on empirical observations that lack cohesive theoretical grounding (Ragione & Risitano, 2026). Specifically, while the transformative potential of AI in green marketing is widely acknowledged, extant scholarship frequently overlooks the nuanced mechanisms by which algorithmic transparency reconciles systemic greenwashing concerns with individual cognitive appraisal (Ibeama et al., 2025; Mineeth et al., 2025). Furthermore, although existing research highlights how social media and online information systems elevate collective environmental awareness (Joseph, 2026), there remains a notable empirical gap in understanding how personalized AI-driven recommendation systems uniquely modulate this awareness to foster sustained purchase intentions (Sathish et al., 2026). Current literature further indicates that while sustainable consumption research is rapidly expanding, it remains theoretically disjointed, often failing to isolate the specific influence of predictive AI on the

psychological progression from trust to deliberate action (Shaimerdenkyzy et al., 2025). Moreover, while existing studies confirm that social influence and personalised nudges can stimulate pro-environmental choices, they often neglect the ethical complexities of algorithmic bias and data-driven manipulation that may paradoxically hinder consumer trust (Andrić et al., 2025; Sathish et al., 2026). To address these unresolved gaps, the field requires a more nuanced integration of consumer behaviour theories that account for how AI-mediated transparency, rather than mere information intensity, differentiates authentic ecological engagement from superficial digital signalling (Agarwal et al., 2025; Lawati & Busaidi, 2025). Building on this conceptualisation, this research bridges the disconnect between macro-level digital sustainability goals and the micro-foundations of consumer choice by investigating how AI capabilities facilitate dematerialisation and resource-efficient engagement (Kowsar & Forid, 2025). Moreover, integrating AI into the marketing mix enables the systematic reduction of cognitive barriers often characterised as the “dragons of inaction” by providing personalised ecological footprints that align individual consumption with verifiable social norms (Hermann, 2022).

2.2.AI-Enabled Marketing

AI-driven personalization optimizes digital marketing by leveraging behavioural insights and data efficiency to create highly targeted, eco-conscious consumer journeys (Mahshid & Mohammad, 2025). By employing predictive analytics, these systems can anticipate individual preferences for sustainable alternatives, thereby minimizing the cognitive load associated with evaluating diverse environmental attributes (Arantes & Costa, 2024). Furthermore, artificial intelligence-based recommendation systems strengthen these consumer relationships by synthesizing historical purchasing patterns, which encourages some more deliberate shift toward organic and sustainable product categories (Angadi, 2026). By enabling real-time transparency and high-fidelity feedback loops, these computational frameworks help bridge the gap between abstract environmental goals and immediate, ethically grounded purchase decisions (Hammami, 2025). However, the deployment of such predictive technologies introduces systemic risks, as algorithmic opacity and potential biases in data processing may undermine the very trust necessary for sustained consumer engagement (Emon & Khan, 2025). The intersection of these advancements necessitates a rigorous ethical framework to address concerns regarding data privacy and the potential for manipulative consumption patterns that could exacerbate psychological reactance (Adileh, 2025; Barnwal, 2026). Accordingly, firms must cultivate algorithmic accountability by ensuring that personalisation remains transparent, thereby balancing operational efficiency with the ethical requirements of maintaining long-

term consumer trust (Alyami et al., 2026). This requires clear disclosure of data practices, meaningful consumer consent, explainable recommendation criteria, and regular audits for discriminatory or misleading outputs. Such safeguards can preserve consumer autonomy while strengthening the credibility of sustainability communications, allowing AI-enabled personalisation to support green purchase decisions rather than intensify perceptions of manipulation (Alsaffarini & Awwad, 2026; Bjørlo et al., 2021).

2.2.1. AI-Enabled Digital Green Marketing and green marketing trust

The conceptualization of green marketing trust in the age of artificial intelligence hinges on the perceived reliability and transparency of autonomous systems during the consumer decision-making journey (Eid et al., 2024). By aligning predictive algorithmic outputs with authentic sustainability values, firms can transform technical reliability into a foundational cognitive anchor that validates the consumer's perception of the brand's ecological integrity (Hermann, 2022; Landoulsi, 2025). This transition relies on the capability of machine learning architectures to provide consistent, explainable sustainability indicators that mitigate scepticism regarding corporate greenwashing (Ansah, 2025; Babatunde et al., 2024). Consequently, this systematic reinforcement of perceived honesty functions as a crucial antecedent to cultivating robust green marketing trust, which serves as the primary psychological bridge toward heightened environmental awareness (Chingono et al., 2026). Furthermore, this trust acts as a cognitive filter, enabling consumers to decode complex ecological data points more accurately, which translates generalized environmental concern into specific, actionable purchase motives (Joshi, 2025). In this context, the integration of algorithmic trust functions as a catalyst, shifting consumer perception from passive observation to active participation in sustainable ecosystems (Modi, 2026). By ensuring that AI-based predictive marketing remains ethically aligned, businesses can significantly enhance the credibility of their green initiatives and reinforce long-term consumer loyalty (A'yun & Setyaningsih, 2025; Naz & Kashif, 2025). This mechanism of trust-building is further bolstered by the application of sentiment analysis and natural language processing, which allow firms to continuously calibrate their ecological messaging in response to shifting consumer sustainability mind-sets (Rani et al., 2025; Tyagi et al., 2026). Integrating these technical capabilities allows for the mathematical modeling of trust formation as a dynamic process, where algorithmic transparency acts as a stabilizing factor against the volatility of consumer privacy concerns (Chen, 2025). From the above these are the hypotheses

H1a: AI enabled digital green marketing positively influences trust in green marketing.

H1b: Trust in green marketing positively influences sustainable consumption.

H1c: Trust in green marketing mediates the relationship between AI based digital green marketing and sustainable consumption.

2.2.2. AI-Enabled Digital Green Marketing and environmental awareness

The use of AI enables platforms to create environmental awareness of the impacts of consumption of specific goods by individuals by utilizing their personal values to create a narrative that consumers can relate to that highlights environmental concerns (Alhamad et al., 2023; Eroğlu et al., 2026). Furthermore, through synthesizing information regarding the carbon footprints and ecological impacts of individuals by consumers of various products, platforms can provide environmental awareness of the role that each individual has to play in the mitigation of environmental crises (Laheri et al., 2024). Overall, then, environmental awareness enables the consumers to make purchasing decisions based on their awareness of the potential environmental impacts of their choices, as they cognitively analyse their potential consumption of goods and their impact upon the environment (Daoud et al., 2024; Kanchana, 2024). As a result of these cognitive analyses of environmental impacts of potential purchases, consumers develop green purchase intention - their intention to make purchases that minimizes their negative impact upon the environment (H. Liu, 2025; Mano et al., 2026). Additionally, green purchase intention itself is a cognitive and mental designation of the consumer towards their intention to make purchases that align with their sensibilities towards the environment (Iqbal et al., 2023). The behavioural outcome of digital intelligence is reflective of the ability of digital intelligence to catalyse the formation of habits among consumers that exhibit a preference for the purchase of sustainable goods due to the reduction of the information processing burden on the consumers when making ethical purchasing decisions (Si et al., 2026). In examining the impact of such intention on the actual purchasing behaviour of consumers, scholars have discovered that among consumers with high levels of environmental consciousness, the sentiment that they possess towards environmentally-friendly purchases has a significant impact upon their actual purchasing behaviour (Shehawy & Ali Khan, 2024). Thus, the concept of purchase intention is often recognised as a critical behavioural element within the context of sustainable consumption, reflecting the intention of consumers to only purchase goods that exhibit the least possible impact upon the environment (Zhuang et al., 2021).

H2a: AI-enabled digital green marketing positively influences environmental awareness.

H2b: Environmental awareness positively influences sustainable consumption.

H2c: Environmental awareness mediates the relationship between AI-enabled digital green marketing and sustainable consumption.

2.2.3. AI-Enabled Digital Green Marketing and Green Purchase Intention

The integration of autonomous AI agents and predictive analytics into digital green marketing efforts alters consumer behaviour from merely having an environmental concern to acting with a goal towards sustainability (Aldaihani et al., 2024; B. Frank, 2021). These systems are able to successfully alter the purchasing intentions of consumers as a result of their ecological awareness and knowledge (Guiao & Lacap, 2022). Consumers exhibit a willingness to purchase products that have certain ecological characteristics as opposed to those conventional products that are available in the market today. This willingness or “intention” is indicative of the consumer’s mental consideration of purchasing eco-friendly goods as compared to conventional goods and their known ecological benefits (Tarabieh, 2021). Furthermore, these purchase intentions indicate that the consumers are intentionally altering their behaviour and purchasing certain products as a means of minimizing their ecological footprint and supporting their personal goals regarding sustainability in their lives (Ansu-Mensah, 2021). Additionally, these behavioural intentions are reinforced through the AI’s ability to recommend sustainable products for each individual consumer that minimize the amount of information that the consumer must process in order to make such a choice (Ahmed et al., 2025). By reducing the friction between intention and participation in market activities, these intelligent systems act as key drivers of the development of purchasing habits from existing attitudes of pro-environmental behaviours (Surbakti et al., 2025). Furthermore, these developed behavioural patterns indicate that the use of AI-enabled systems to provide consumers with their ecological data is associated with an increase in the consumer’s wilfulness in the maintenance of such purchasing habits over time (Garg et al., 2025; Sohaib et al., 2025). These findings help to confirm that purchase intentions are indeed a stable psychological state (Armutcu, 2026), as such reinforcements of that initial purchasing intention help to bridge the gap between attitude and behaviour in relation to ecological practices (Singh & Surbhi, 2026).

H3a: AI-enabled digital green marketing positively influences green purchase intention.

H3b: Green purchase intention positively influences sustainable consumption.

H3c: Green purchase intention mediates the relationship between AI-enabled digital green marketing and sustainable consumption.

2.2.4. AI-Enabled Digital Green Marketing and Sustainable Consumption

Beyond the current decision to purchase a product, the use of AI-enabled digital green marketing impacts the product’s life cycle after purchase. For instance, the post-purchase processes of reusing, repurposing, and recycling products can be similarly influenced by the same digital marketing platforms by providing incentives for these actions to be taken by consumers (Alam et al., 2026; Alhakimi et al., 2026). The use of feedback loops and machine learning models, including reinforcement learning algorithms, allows for these digital

platforms to continuously find ways to encourage consumers to participate in these actions (Panwar et al., 2025). Furthermore, these systems can allow waste management systems to be implemented directly into the platforms, allowing consumers to monitor the life span of their products after they have initially purchased them (Jing & Yang, 2025). These systems aim to encourage the longevity of the products that are purchased by consumers, and to focus their attention on the availability of high-quality, sustainable alternatives to the products that they utilize. Overall, then, these systems utilize the psychological effect of focusing consumers upon the idea of the longevity of their products in comparison to the ephemeral nature of consumption trends (Rathore, 2019). The auspices of AI are further bolstered by the ability of AI to allow for predictive maintenance and to sense demand for the products that are to be made by the plants; this ensures that the plants do not produce more than the consumers will consume, thus reducing the amount of waste that is released into the environment (Madanaguli et al., 2024). Furthermore, these algorithm-driven recommendation systems are also beneficial for the trust that consumers place in the brands and their claims of environmental safety and benefit, for they ensure the authenticity of those claims and help to eliminate concerns of greenwashing of those environmentally-friendly companies (Anjorin et al., 2024; Shobana & Venkatesan, 2026). The transparency of these companies reduces the scepticism that consumers may otherwise have of those claims (Paiva, 2025). Finally, these AI systems ensure that the companies can effectively nudge their customers into performing the various steps required of a circular economy, as the implementation of gamification and feedback systems with these AI-enabled nudges has been shown to effectively encourage consumers to become more environmentally conscious and to engage with those companies (Fernández et al., 2025; Panwar et al., 2025).

H4: AI-enabled digital green marketing positively influences sustainable consumption.

2.2.5. Conceptual Model

The conceptual model depicts the role of AI-enabled digital marketing systems in developing trust and environmental awareness among consumers, which then influence the development of the intention to purchase green products.

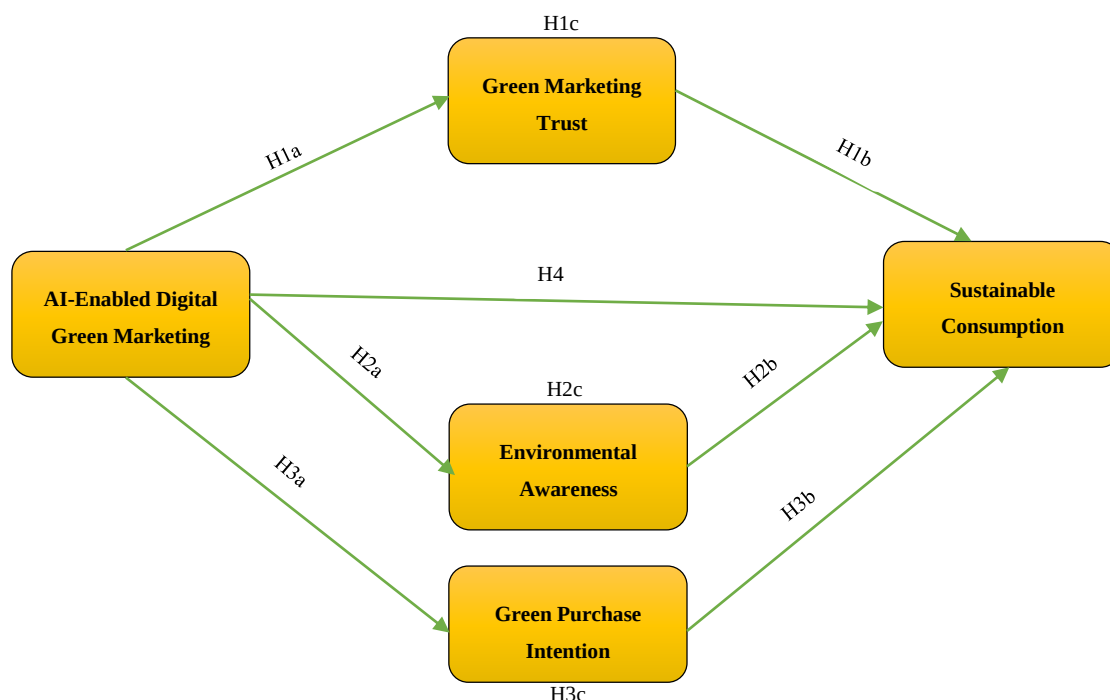


Figure 1: Conceptual Model

3. Research Methodology

3.1. Research Instrument

A questionnaire will be utilized to gather the opinions and insights of the respondents concerning the impact of AI-enabled digital marketing on the trust and environmental awareness of the consumers, as well as their purchasing intentions for green products. The questionnaire will utilise scales that have been established from previous studies and utilized in various research surveys to assess each of the variables (Al-Zagheer et al., 2026). Each scale will utilize five-point Likert scales to assess each of the concepts within the study (Keskin et al., 2025; Ru et al., 2025). Furthermore, structural equation modeling techniques will be utilized to determine the relationships between each of the established variables in the study (Fallatah et al., 2026).

3.2. Research Design

The data to be collected from the consumers will be collected through the use of a survey. Furthermore, to ensure that the data is representative of the various individuals in society that may be exposed to these types of AI-enabled digital marketing systems and have varying opinions regarding them, a stratified random sampling technique will be utilized to form the study's participants (Mahajan & Kattatt, 2026; Yu & WisaengI, 2026). Data collection will utilize an online survey platform and will only be distributed to individuals who have used at least one AI digital marketing platform in the past six months (Al-Zagheer et al., 2026; Allahham et al., 2024).

4. Results and discussion

4.1.Measures and Analysis

The constructs to be measured will use established scales from other researchers; trust in green marketing platforms will use adaptations of Chen's scale to measure trust levels, environmental awareness will use established and validated environmental awareness scales, and green purchase intention will use established and validated scales that have been used to assess green purchase intentions in the past (Luo et al., 2023; Yan et al., 2024). These constructs will be measured using partial least squares structural equation modeling (PLS-SEM), a structural modeling technique that is often utilized to assess models that include serial mediation effects, whether those constructs are formative or reflective in their construction (Tanchangya et al., 2026). Such a model will be assessed for the significance and effect sizes of each of the direct and indirect effects within the model, calculated through the use of bootstrapping procedures with 5,000 resamples of the data set (Indrajaya et al., 2024; Khakwani et al., 2024). Additionally, the model will be assessed for the validity of the constructs; the values of the constructs will be assessed for a value of at least 0.50 for the average variance extracted measure, as well as the loadings for each of the indicators within the constructs to ensure they are sufficiently reliable (Bag et al., 2026; Hussain & Huang, 2022).

Table 1: Demographic Profile of the Respondents (n=365)

Variable	Category	Frequency	Percentage %
Gender	Male	201	55.07
	Female	164	44.93
Age	18-24 Years	84	23.01
	25-34 Years	127	34.79
	35-44 Years	80	21.92
	45-54 Years	49	13.42
	Above 55 Years	25	6.85
Educational Qualification	SSC	38	10.41
	Diploma	41	11.23
	Graduation	118	32.33
	Post-graduation	141	38.63
	Doctorate	27	7.40
Occupation	Student	63	17.26
	Salaried Employee	145	39.73
	Self-Employed	51	13.97
	Business owner	45	12.33
	Professionals	37	10.14

Residence	Homemaker	15	4.11
	Others	9	2.47
	Rural	78	21.37
	Urban	169	46.30
	Semi-Urban	118	32.33

The following Table 1 presents the demographic profile of the study. The study surveyed 365 respondents of diverse socio-demographic characteristics. Regarding gender, there were 55.07% male respondents and 44.93% female respondents. Most respondents were between the ages of 25 and 34 years old (34.79%), followed by those between the ages of 18 and 24 years old (23.01%) and those between the ages of 35 and 44 years old (21.92%). The majority of the participants held postgraduate degrees (38.63%), followed by those with undergraduate degrees (32.33%). Most respondents were salaried employees (39.73%). Most of the respondents were from urban areas (46.30%), followed by semi-urban areas (32.33%) and those from rural areas (21.37%). Overall, the demographic data for the study is diverse enough to ensure the validity of the survey responses as to the perceptions of AI-enabled digital green marketing and green consumption.

4.2. Measurement model

From Table 2, all constructs in this study were found to have convergent validity and good measurement properties. All constructs have factor loadings (FL) from 0.676 to 0.917 which are greater than the suggested minimum value of 0.70. This means all items are adequate representatives of their respective constructs. All constructs have Cronbach's Alpha values from 0.870 to 0.915 which are greater than the minimum value of 0.70. This demonstrates that internal consistency reliability of the measurement items is high for all constructs. Composite Reliability (rho_a) values are from 0.873 to 0.917 which are greater than the minimum value of 0.70. This shows that the constructs are reliable and stable. All constructs have Average Variance Extracted (AVE) values from 0.524 to 0.797 which are greater than the minimum value of 0.50. This demonstrates that the constructs have adequate convergent validity because more than half the variance in the measures is explained by the constructs. All constructs have VIF values less than the cut off value of 5 (values range from 1.707 to 3.034). This means there is no multicollinearity in the results and all items make adequate contribution to the construct. After this all variables are in acceptable range and the constructs can be said to be reliable and all items have adequate validity with no multicollinearity present. Table 2 presents the results of validity and reliability tests performed.

Table 2: Construct reliability and validity

Construct	Factor Loadings	Cronbach's alpha	Composite reliability (rho_a)	VIF	AVE
AI-digital green marketing		0.87	0.873	1.707	0.524
AIDGM1	0.713				
AIDGM2	0.758				
AIDGM3	0.759				
AIDGM4	0.683				
AIDGM5	0.676				
AIDGM6	0.691				
AIDGM7	0.737				
AIDGM8	0.767				
Environmental Awareness		0.902	0.916	2.626	0.772
EnviAware1	0.854				
EnviAware2	0.893				
EnviAware3	0.872				
EnviAware4	0.894				
Green Marketing Trust		0.915	0.917	3.034	0.797
GMT1	0.900				
GMT2	0.857				
GMT3	0.917				
GMT4	0.897				
Green Purchase Intention		0.915	0.917	2.861	0.797
GPI1	0.898				
GPI2	0.900				
GPI3	0.884				
GPI4	0.889				
Sustainable Consumption		0.913	0.915	2.838	0.794
SusConsum1	0.904				
SusConsum2	0.885				
SusConsum3	0.890				
SusConsum4	0.885				

Note: VIF: Variance Inflation Factor, AVE: Average Variance Extracted

4.3.Discriminant validity

Finally, the discriminant validity of the constructs was assessed using the Heterotrait-Monotrait ratio (HTMT) and the Fornell-Larcker criterion. The concept of discriminant validity is essential in PLS-SEM as it ensures that the constructs theoretically different from each other are also empirically different from each other. Henseler, Ringle, (2015) proposed the use of the

HTMT ratio to assess the discriminant validity of the constructs in their model. The researchers suggested using a threshold of 0.85 as a conservative value for the HTMT ratio when the constructs in the model are theoretically distinct from each other.

Table 3: Heterotrait-monotrait ratio (HTMT) - Matrix

Construct	AI-Digital Green Marketing	Environmental Awareness	Green Marketing Trust	Green Purchase Intention	Sustainable Consumption
AI-Digital Green Marketing					
Environmental Awareness	0.268				
Green Marketing Trust	0.278	0.292			
Green Purchase Intention	0.426	0.300	0.256		
Sustainable Consumption	0.302	0.293	0.363	0.283	

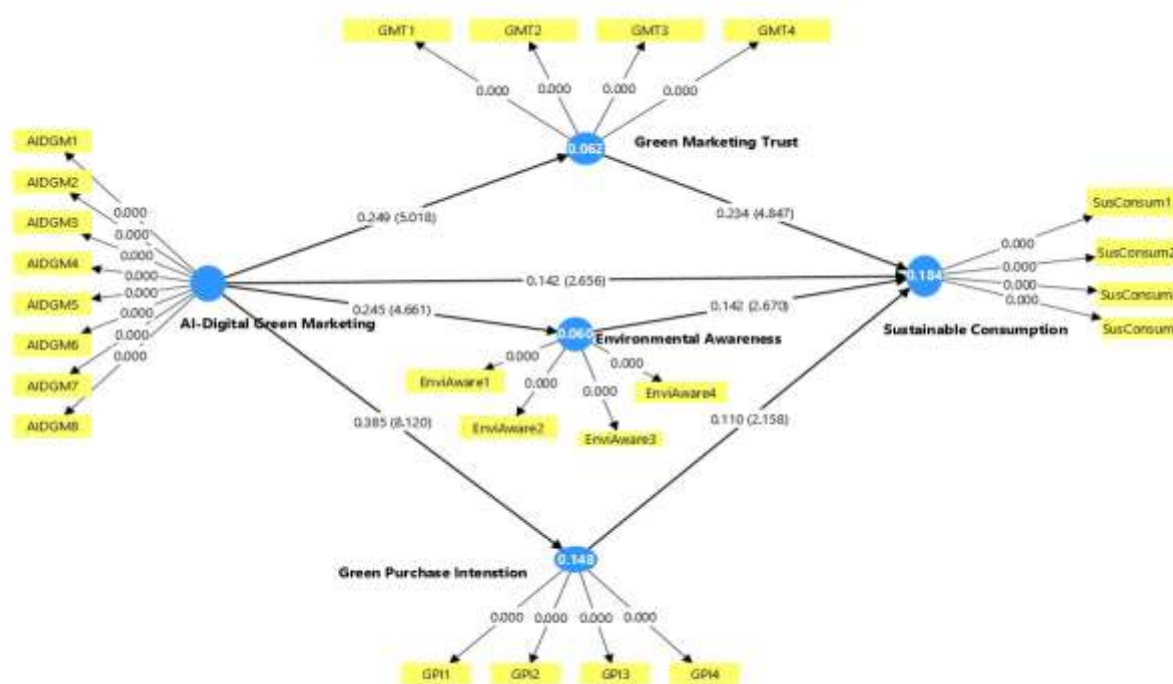


Figure 2: Structural Equation Modeling (PLS-SEM)

4.4. Structural model result analysis

The t-values and significance of the path coefficients in the presented model were obtained through the bootstrapping procedure using 5,000 bootstrap samples based on the 365 cases used for the PLS-SEM model. The results of the structural model are presented in Table 5, indicating the relationships among the variables AI-digital green marketing, green marketing trust, environmental awareness, green purchase intention, and sustainable consumption. The 95% confidence intervals for each variable were obtained by using the 2.5% and 97.5% percentiles of the bootstrapped distribution of each variable.

AI-digital green marketing was found to have a positive and significant effect upon the variable of green marketing trust ($\beta = 0.249$, $p < 0.001$). Furthermore, green marketing trust was also found to have a positive and significant effect upon the variable of sustainable consumption ($\beta = 0.234$, $p < 0.001$). Thus, AI-digital green marketing also had a significant and positive indirect effect upon the variable of sustainable consumption, specifically through the influence that it has upon green marketing trust ($\beta = 0.058$, $p = 0.001$).

The second set of results demonstrates that AI-digital green marketing significantly enhances environmental awareness ($\beta = 0.245$, $p < 0.001$). The enhanced environmental awareness significantly impacts sustainable consumption as represented by the model coefficient of 0.142 ($p = 0.008$). The indirect effect of AI-digital green marketing on sustainable consumption through environmental awareness is also significantly positive ($\beta = 0.035$, $p = 0.028$).

Similarly, AI-digital green marketing has the strongest direct influence on green purchase intention ($\beta = 0.385$, $p < 0.001$). Green purchase intention has a significantly positive influence on sustainable consumption with a model coefficient of 0.110 ($p = 0.031$). The indirect effect of AI-digital green marketing on sustainable consumption through green purchase intention ($\beta = 0.042$, $p = 0.036$) is also significant.

Finally, AI-digital green marketing has a positive and significant direct effect on sustainable consumption ($\beta = 0.142$, $p = 0.008$). Thus, AI-digital green marketing impacts sustainable consumption in direct as well as indirect ways through green marketing trust, environmental awareness, and green purchase intention. The indirect effect of AI-digital green marketing on sustainable consumption through green purchase intention is the strongest, followed by the indirect effects through environmental awareness and green marketing trust. The confidence intervals for all relationships exclude the value of zero, indicating that all the results are statistically significant.

Table 5: Structural Analysis results

Hypotheses	Constructs	Path Coefficient	Standard deviation (STDEV)	t-values	p-values	Hypotheses	Confidence Intervals	
							2.5%	97.5%
H1a	AI-Digital Green Marketing -> Green Marketing Trust	0.249	0.050	5.018	0.000	H _{1a} Supported	0.155	0.348

H1b	Green Marketing Trust -> Sustainable Consumption	0.234	0.048	4.847	0.000	H _{1b} Supported	0.137	0.328
H1c	AI-Digital Green Marketing -> Green Marketing Trust -> Sustainable Consumption	0.058	0.017	3.424	0.001	H _{1c} Supported	0.029	0.095
H2a	AI-Digital Green Marketing -> Environmental Awareness	0.245	0.052	4.661	0.000	H _{2a} Supported	0.143	0.348
H2b	Environmental Awareness -> Sustainable Consumption	0.142	0.053	2.670	0.008	H _{2b} Supported	0.039	0.247
H2c	AI-Digital Green Marketing -> Environmental Awareness -> Sustainable Consumption	0.035	0.016	2.200	0.028	H _{2c} Supported	0.008	0.070
H3a	AI-Digital Green	0.385	0.047	8.120	0.000	H _{3a} Supported	0.294	0.479

	Marketing -> Green Purchase Intention							
H3b	Green Purchase Intention -> Sustainable Consumption	0.110	0.051	2.158	0.031	H _{3b} Supported	0.007	0.211
H3c	AI-Digital Green Marketing -> Green Purchase Intention -> Sustainable Consumption	0.042	0.020	2.103	0.036	H _{3c} Supported	0.003	0.084
H4	AI-Digital Green Marketing -> Sustainable Consumption	0.142	0.053	2.656	0.008	H ₄ Supported	0.082	0.197

5. Discussion

The result demonstrates that the green trust construct, based on the signaling theory and the trust transfer framework, significantly impacts the relationship between environmental awareness and purchase intention, supporting the hypotheses (H1a, H1b, H1c). The AI-enabled platforms facilitate the reduction of the scepticism that individuals typically exhibit regarding the environmental claims of the companies offering these platforms (Khoso et al., 2025). Furthermore, the results also indicate that the digital component within the AI-enabled platforms is the strongest predictor of the outcomes discussed, as the interaction with the platform and its personalised elements is vital for translating environmental awareness into purchase intention (Sandira, 2025).

The result demonstrates that, based on the VBN theory, these findings not only highlight the role of AI in creating a symbiotic relationship between the corporation and the

consumers based on their values, but also provide further support for the hypotheses (Baruno & Indrasari, 2025; Rathore, 2018), thus supporting the hypotheses (H2a, H2b, H2c). Furthermore, this theoretical model also helps to indicate the ways in which AI must be integrated into the marketing strategy in general, suggesting a change in the approach to marketing in relation to sustainability (Bashar et al., 2025; Guerra-Tamez et al., 2024).

The result also demonstrates, based upon the theories of the TPB and the ELM, the need for a balance between the deep learning algorithms that may be employed in the various aspects of the marketing campaign and the need to maintain the transparency of those AI systems to the consumers (Acatrinei et al., 2025; Ediriweera et al., 2024). Thus, these hypotheses are supported (H3a, H3b, H3c). However, the recommendations for the marketing of AI-integrated sustainable products include the use of explainable AI to minimise the potential negative impact on the trust that is required of the consumers of those products (Bui, 2026).

Finally, according to the models of behavioural economics, these findings are helpful in determining the role that AI can play in the creation of sustainable products. However, the limitations of such a model are acknowledged, as they are reliant upon the cross-sectional and consumer survey data to arrive at these conclusions (Alam et al., 2026). Thus, hypothesis (H4) is supported by these findings.

5.1.Theoretical Implications

This paper contributes to the existing literature by conceptualising AI as a component that balances the technological capabilities of AI with the psychological motivations behind green consumerism (Oyekunle et al., 2024). Furthermore, by establishing that trust and environmental awareness act as the mediators within this model, this study provides a psychological framework for understanding how AI can effectively trigger the behaviour of consumers to purchase green products based upon their environmental awareness and trust in the AI systems that provided that information to those consumers (Ibeama et al., 2025; Yao, 2024). Additionally, these findings help to clarify the role that trust plays within the AI and green consumerism model, indicating that trust is an essential cognitive component that must be established as a prerequisite for activating the other mediator of environmental awareness (Keng et al., 2025). Future studies can utilize these findings to investigate topics like the impact of AI on the trust of consumers in those algorithms over time (Frank et al., 2023; Haupt et al., 2025). Additionally, research in the future can incorporate higher-order constructs to assess abstract concepts and to understand how the ethical concept of consumers relates to the influence of these algorithms (Lopes et al., 2024). By gathering this information through experiments or by tracking the behaviour of these consumers with the implementation of such

AI systems, researchers can effectively eliminate any bias regarding these sustainability studies.

5.2. Managerial Implications

To maximise the utility of these insights, brand managers should focus on creating communication strategies for their customers that leverage the use of chatbots and behavioural analytics to create long-term relationships with their customers (Hue et al., 2026). Companies should implement these types of automated tools to allow for the provision of certifications and traceability for their sustainability efforts and supply chain, which will reduce the scepticism that they may receive from their customers regarding those efforts (Liu & Chen, 2025; Qi et al., 2025). Furthermore, brands will need to create ethical frameworks for the implementation of these chatbots that ensure the privacy of the customer's data and that their efforts are not biased towards certain customers over others (Ganesh et al., 2024).

5.3. Limitations and Future Research

The study presented lacks the ability to form causation or analyse the changes in the relationship between the variables over time (Jin & Viswanathan, 2025; Putra et al., 2024). Furthermore, the research used only one platform to represent AI applications in marketing, limiting the study's generalizability (Saleh, 2026). Therefore, future studies should utilize a longitudinal and cross-platform study to determine how explain ability in AI impacts trust in different demographics (Alsaffarini & Awwad, 2026; Eid et al., 2024). Additionally, it would be interesting for future researchers to investigate the relationship between human-robot interaction and green behaviour in the context of this study. Creating human-robot interactions with green AI agents may have an impact on the authenticity of the information that is presented to the consumer in sustainability campaigns (Grewal et al., 2020). Also, another challenge for researchers is the inherent limitations of self-reported data from the survey by potentially biased respondents; therefore, data from another source or actual purchases would be beneficial to gather (Pan et al., 2026). Furthermore, it would also be interesting to explore the impact of cultural differences from the regions represented in this study, as it is likely that the values and digital literacy levels of the individuals from each region would have an impact upon the efficacy of these AI-enabled messaging systems (Li et al., 2023).

5.4. Conclusion

The result of this study demonstrates that AI-enabled digital green marketing can significantly influence sustainable consumption from both a direct and indirect effect through the green marketing trust, environmental awareness, and green purchase intention variables. The analysis showed that the green purchase intention had the most significant influence on the digital green

marketing model as compared to other variables. The use of AI to personalize digital green marketing campaigns can significantly impact sustainable consumption as it reduces the consumer's intention towards greenwashing in green marketing and improves the link between the attitude and behavioural component of implementing sustainable consumption in the green marketing industry. Based on the results of this research, companies can use the knowledge of the influence of AI on sustainable consumption to inform their digital green marketing strategies to improve the level of trust that consumers have in the brands they consume and improve their environmental goals in the long term.

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