Conference Proceedings: "Sustainability Through Digital Transformation: Insights from Management, Humanities, and Sciences" SDT– Insights 2026, Organized by- The Ashoka Institute of Technology and Management, Varanasi (30–31 January 2026) In IJRT ISSN: 2321-7529

Role of Generative AI in Promoting Sustainable Consumer Decision-Making

[1]Abhay Deep, [2*]Dr. Vinay Ku. Yadav, [3]Dr. A.P. Singh, [4]Yashika Kesharwani, [5]Ms. Kriti Yadav

[1/4/5]Research Scholar, [2]Assistant Professor, [3]Professor

[1/2/3/4]Dept. of Business Management, Indira Gandhi National Tribal University Amarkantak, MP, [5]Dept. Of Management Studies Guru Ghasidas Vishwavidyalaya, Bilaspur, Chhattisgarh

[1]abhaydeepsingh56@gmail.com, [2]vinay.yadav@igntu.ac.in, [3]amarendra.singh@igntu.ac.in, [4]yashirgmnew@gmail.com, [5]kitty.yadav2303@igntu.ac.in

https://doi.org/10.64882/ijrt.v14.iS1.1151

Abstract

Generative Artificial Intelligence (AI), in the environment of rapid digital change, is becoming an important force of consumer awareness, interaction, and sustainability-based consumer decision-making. In this paper, I explore how generative AI can be used to encourage consumers to make sustainable choices and how this can be achieved based on the secondary data sources, which are academic sources, industry sources, and sustainability-oriented policy reports. The systematic review and thematic analysis of the research published between 2018 and 2025 are followed to form an idea of how generative AI technologies, including personalized recommendations, AI-generated content, and digital assistants, influence consumer knowledge and sustainable buying choices. It can be observed in the analysis that generative AI can contribute to sustainability awareness via better access to pertinent information, customized communication, and transparency in brand messages. Meanwhile, the issues of ethical usage, data confidentiality, biasing algorithms, and greenwashing pose possible threats that can affect consumer confidence and decision making. Combining the insights of management and humanities and applied sciences, the paper states that responsible and ethical AI implementation is necessary to guarantee that digital transformation serves a purpose in terms of sustainable consumption and lifelong well-being of society.

Keywords: Generative Artificial Intelligence, Sustainable Consumption, Consumer Decision-Making, Digital Transformation, Ethical AI, Sustainability

Introduction

Digital transformation is taken as one of the most characteristic factors that have been influencing the modern business landscapes, consumer markets, and socio-economic structures. The adoption of digital technologies in organizational processes has reinvented the way companies generate value, interact with stakeholders, and how they react to the global problems, including climate change, the lack of resources, and social inequalities (George et al., 2021). One of these issues has been sustainability which is a major issue among governments, corporations, and even the consumers.

Sustainable consumption is a concept describing consumption styles that reduce the negative environmental impact, enhance social well-being, and economic sustainability in subsequent generations (UNEP, 2020). Consumers are also putting pressure on choosing products based not only on price and quality, but also on the environmental and ethical aspects of their buying choices (Belz and Peattie, 2012). Nevertheless, even with the increasing awareness, sustainable consumer behavior has not been consistent, mainly because of information overload, poor transparency, and insufficient knowledge of the sustainability assertions (Joshi & Rahman, 2015).

Artificial intelligence (AI) has in this respect been cited as one of the critical facilitators of sustainability via digital transformation. AI systems are able to analyse large volumes of data, detect intricate trends and provide personal insights to aid informed decision making (Kumar et al., 2021). Generative AI is a new branch of AI systems that has emerged in the recent past. Large language models (LLMs), generative adversarial networks (GANs), and multimodal models, which can generate human-like text, images, audio, and video, are all part of generative AI (Brown et al., 2020; Goodfellow et al., 2014).

Generative AI, as opposed to traditional AI systems, is more about prediction and classification, generated, and engages with users in natural language forms. ChatGPT, Bard, Gemini, and Midjourney are all becoming popular marketing communication tools, customer engagement, sustainability reporting, and product recommendation systems (Dwivedi et al., 2023). These applications can help reduce and simplify complicated sustainability data into the comprehensible stories, which will aid responsible consumer behavior. Nevertheless, there are also severe ethical considerations associated with the use of generative AI. Researchers have expressed concerns regarding the dangers of algorithmic bias, false information, privacy invasion, deficit of transparency, and greenwashing orchestrated by AI (Floridi et al., 2018; Delmas and Burbano, 2011). These issues directly affect consumer trust, and this is the key factor of molding sustainable behavior (Peattie & Collins, 2009).

Although the generative AI has become increasingly relevant over the last few years, there is still a lack of scholarly research on the subject of sustainable consumer decision-making. The majority of the available studies concentrate on AI in marketing or on sustainability behavior, yet not many of them combine these two fields in a systematic approach. Thus, it is highly desirable to have an all-encompassing synthesis of current knowledge. This paper fills this gap by using a systematic review of the literature on the topic of generative AI, consumer behavior, and sustainability. The goals of this paper are:

- To critically discuss the existing studies on generative AI and sustainable consumer behavior.
- To determine some of the major processes involved in how generative AI can affect consumer decision-making.
- To study ethical and governance issues related to the sustainability of AI.

This paper will be valuable to the interdisciplinary literature and also provide practical recommendations to policymakers and practitioners who might want to ensure that

technological innovation is related to sustainable development objectives by incorporating the insights related to management, marketing, digital ethics, and the study of sustainability.

Although there has been an increasing literature in artificial intelligence and sustainability, the current research is still disjointed in the technical, management, and ethical qualms. The majority of previous studies aim at the general adoption of AI, automation effectiveness, or sustainability reporting, but minimal factors have been given to the specific contribution of the generative AI to the development of sustainable consumer decision-making processes. Specifically, the socio-cognitive mechanisms by which generative AI affects the consumer trust, perception of transparency, and ethical judgment are under-theorized. Moreover, the existing reviews rarely combine the view on consumer behavior, digital sustainability, and ethical AI in one analysis. Filling this gap, the current work provides a systematic review and comes up with a unified conceptual framework describing how generative AI applications affect sustainable consumer decisions by personalizing and enhancing transparency of information and establishing trust and considering ethical risks and greenwashing. The research can therefore add interdisciplinary scholarship through the enhancement of theoretical knowledge and offering practical information on responsible digital transformation.

Literature Review

Generative Artificial Intelligence: Idea, Development, and Uses

Artificial Intelligence (AI) can be described as any computational machine that is meant to execute functions traditionally performed by a human brain, including learning, reasoning, solving problems, and natural language processing (Russell and Norvig, 2021). In the last ten years, AI has been changing to no longer be rule-based expert systems, to data-driven machine learning models, and more recently to deep learning architectures that can generate new content. This is the new breed of systems, which is known as Generative Artificial Intelligence (generative AI).

Generative AI is a revolution in the creation of AI, these systems can generate original content, whether it is text, images, audio, video or code (Goodfellow et al., 2014). The most noticeable types of generative AI models are Generative Adversarial Networks (GANs), Variational Autoencoders (VAEs), and Large Language Models (LLMs) like GPT, PaLM, and Claude (Brown et al., 2020). They are trained with huge datasets and learn the probabilistic representations of language, image, and other forms of expression, which allows them to produce human-like answers.

Goodfellow et al. (2014) proposed the use of GANs as a framework whereby two neural networks, which are a generator and a discriminator, compete to generate data that becomes more and more realistic. Likewise, Brown et al. (2020) established that the large language models that are trained and have billions of parameters can perform complex linguistic tasks with minimal supervision. The advancements have greatly increased AI applications in industries.

Generative AI finds its applications in business and marketing, automated content generation, personalized advertising, chatbots, automation of customer service,

recommendation systems and decision support systems (Davenport et al., 2020). Companies are embracing generative AI to expand communication, lower the cost of operation, and improve customer interaction. Dwivedi et al. (2023) state that generative AI is quickly becoming an essential part of digital business strategy, as it affects the interaction of organizations with consumers and organizational information management.

Generative AI has more recently been adopted in sustainability reporting and ESG (Environmental, Social, and Governance) reporting. Companies apply AI to create sustainability reports, summarize environmental data and share sustainability initiatives with the stakeholders (George et al., 2021). Such applications put generative AI in the key positioning role between companies and consumers in the decision-making process of sustainability. Nonetheless, researchers state that generative AI not necessarily can be taken as a technological instrument but rather as a socio-technical system that transforms the way humans think, communicate, and establish ethical practices (Floridi et al., 2018). Its strength in making inferences, attitudes, and behaviours makes it especially useful to do consumer research and sustainability studies

Sustainable Consumer Behavior and Decision-Making

The term sustainable consumer behavior is associated with consumption behaviours that are aimed at reducing negative effects on the environment and society, as well as promoting low ecological and economic equilibrium (Belz and Peattie, 2012). It includes buying products that are environmentally friendly, minimizing waste, buying socially responsible companies, and implementing a circular economy.

Theoretically, there are various frameworks that have been used to explain sustainable consumer behavior. Theory of Planned Behavior (TPB) (Ajzen, 1991) is the belief that attitudes, subjective norms, and perceived behavioral control affect the behavior. When consumers are positively pre-disposed to environmental attitudes, social pressure to act responsibly, and they see that their behavior can change, in sustainability terms, they will more readily resort to sustainable behaviour.

The other popular model is the Value-Belief-Norm (VBN) theory which proposes that the personal values and moral norms are the most crucial determinants of pro-environmental behavior (Stern et al., 1999). Whether sustainability is viewed by consumers as a moral obligation, they would become more receptive to responsible consumption practices.

Regardless of these theoretical underpinnings, empirical studies have consistently found that there is some attitude-behavior gap in sustainable consumption. Although, a lot of consumers show positive sentiments about sustainability, a small percentage convert the sentiments they hold to ultimately buy (Carrington et al., 2014). Some of the aspects that are said to have led to this gap include sensitivity to price, absence of information, distrust of the sustainability claims, and scarce access to sustainable options.

In sustainable decision-making, information is of particular importance. Sustainable consumption involves the consumers to filter the complicated data regarding the source of the products, supply, environmental consequences, and ethical conventions (Delmas and Burbano,

2011). The sustainability information however is most of the time technical, disjointed and unverifiable resulting to confusion and cognitive overload.

In their meta-analysis of the green purchase behaviour, Joshi and Rahman (2015) point to the importance of environmental knowledge, perceived consumer effectiveness, trust, and social influence. Out of these, trust in sustainability information is seen as one of the biggest predictors of sustainable behavior. Consumers have lower chances of attaining responsible consumption when they do not trust sustainability claims or they view them as a form of greenwashing. Hence, sustainable consumer decision-making is not a simple rationale economic operation, but rather sophisticated socio-cognitive phenomenon that is influenced by the quality of information, trust, moral impressions, and mediated by technology.

The Digital Technologies as Sustainable Consumption Facilitators

Digital technologies are becoming the recognized potent enablers of sustainable development. Digital sustainability, as a concept, denotes using digital technology in solving environmental and social issues by delivering data-driven solutions, intelligent systems, and engagement with stakeholders (George et al., 2021).

According to Bocken et al. (2014) sustainable business models are supported by digital technologies as it enhances efficiency in the operational processes, minimizes wastes, fosters transparency and improves communication between the companies and stakeholders. Such technologies like blockchain, Internet of Things (IoT), big data analytics, and AI are broadly used in the fields of supply chain management, energy optimization, carbon tracking, and sustainability reporting. In this instance, AI-based systems are important in helping to achieve sustainability through large-scale data processing and producing actionable insights. According to Kumar et al. (2021), AI can decrease resource use, enhance forecasts, and make sustainability suggestions to consumers individually.

In consumer settings, digital platforms and mobile applications are applied to:

- Provide eco-label information
- Compare environmental product impacts.
- Provide sustainability ratings.
- Provide green alternatives.

These tools will assist the consumers in breaking the information barriers and take better decisions.

Generative AI builds upon these features and allows interactive and personal sustainability communication. Rather than fixed sustainability labels or reports, consumers are able to have real-time interactions with AI based assistants, query them about the sustainability of products, and obtain tailor-made responses about products based on their preferences and values. As an example, with the help of AI chatbots, it is possible to describe the carbon footprints, ethical sourcing practices, or recycling opportunities in a simple language to decrease mental effort and make them more available (Davenport et al., 2020). This interactive aspect makes generative AI a key facilitator of knowledge of sustainability and consumer action.

Nevertheless, researchers warn that digital technologies do not necessarily make it sustainable. The effect of their design, rule, and use will be conditional (George et al., 2021). In the absence of ethical protection, digital devices can strengthen consumption, manipulation and misinformation.

Generative AI in Consumer Decision-Making

The classic theory of consumer decision-making is based on a multi-stage model of the problem recognition, the search of information, evaluation of available options, the purchase decision, and post-purchase appraisal (Kotler and Keller, 2016). Each of these stages is mediated more and more through digital technologies.

There are three main ways in which generative AI can change the way consumers make decisions:

Personalization

Personalization can be defined as the tailoring of data, recommendations, and experiences using the consumer information that applies to that particular individual. Generative AI systems address the preferences, browsing history, and behavioral patterns of consumers and provide personalized content based on machine learning algorithms (Davenport et al., 2020).

Individual sustainability messages will make sustainability messages more relevant and engaging, thus consumers are more open to receiving sustainability information. This article states that individualized online communication is more useful and less overwhelming to perceived usefulness and quality of decisions (Bleier et al., 2018).

Information Simplification

Complex sustainability data can be simplified into simple and understandable stories through generative AI. This is especially significant since the information on sustainability is usually technical and not accessible to the non-expert consumers (Delmas & Burbano, 2011).

Through summarizing ESG reports, creating sustainability frequently asked questions, and describing environmental measurements, generative AI will minimize cognitive load and help to make decisions based on information.

Interactive Engagement

Generative AI, as opposed to more static digital tools, allows engaging in a conversation. The consumers are able to raise questions, seek clarification and interact with sustainability issues in a dynamic manner. This interactivity enhances the perceived control and involvement which are all-important aspects in technology acceptance (Davis, 1989).

All of this indicates that generative AI can be used to critically improve the quality of consumer decision-making by increasing access to information, relevance, and engagement.

Ethical Dilemmas and Generative AI Trust

Generative AI causes significant ethical issues, even despite the possible advantages of the technology. Floridi et al. (2018) suggest the following principles, such as transparency, accountability, fairness, privacy, and explicability, that ought to be followed by ethical AI. Nevertheless, numerous existing generative AI models are black boxes that do not provide users with an opportunity to understand the way in which outputs are produced.

Algorithms bias is one of the main concerns. Generative AI systems are trained on historical data, which can contain the existing social, cultural, and economic biases (Dwivedi et al., 2021). Inaccurate training data may result in prejudiced recommendations and false sustainability data.

The other serious problem is the greenwashing by way of AI-generated content. According to Delmas and Burbano (2011), greenwashing refers to the act of deceiving consumers on environmental performance. Generative AI can be readily used to create convincing sustainability narratives that can overstate or lie about environmental assertions, thus posing a greater risk of misinformation.

Another important issue is privacy. Generative AI uses big data on individual information to customize content. The absence of good governance can also result in the misuse of such data that will result in surveillance, manipulation, and loss of consumer control (Floridi et al., 2018).

These ethical concerns have a direct impact on consumer trust which is one of the main constructs in the marketing as well as the sustainability literature. Trust is a factor that is associated with the belief that a certain entity is honest, competent, and reliable (Morgan and Hunt, 1994). In the online setting, it is trust that defines whether consumers believe what they see as recommendations and information on sustainability generated by AI.

The studies have always demonstrated that there is a mediating role of trust between technology application and consumer behavior (Gefen et al., 2003). When consumers feel that AI systems are transparent, ethical and reliable, they will have an increased willingness to use AI-based tools and follow their advice. On the other hand, mistrust results in opposition, doubtfulness and dismissal of sustainability messages. Thus, the impact of generative AI on sustainability in consumer decision-making is not only technological but also relies on the ethics and trust-building processes.

Research gaps and theoretical implications

Although there is increasing concern on AI and sustainability, there are gaps in research. First, the majority of the current literature analyses AI within the scope of operations or organizations, but it does not pay much attention to consumer behavior. Second, generative AI studies are recent, and their application in the decision-making process of sustainability is not fully theorized. Third, there is a lack of empirical research that combines the concepts of generative AI, consumer trust, and sustainable behavior. The majority of accessible studies are either theoretical or general AI adoption as opposed to generative models. Lastly, AI-driven sustainability communication has not been fully addressed in terms of its ethical aspects. Although researchers talk of AI ethics in general, there is a lack of research into the impact of ethical perceptions in sustainable consumer decision-making.

These loopholes reveal the necessity of a coherent conceptual model that will tie together the features of generative AI, their ethical perceptions, consumer trust, and sustainability impact. The gaps need to be filled to promote the development of interdisciplinary research on the digital transformation-consumer behavior-sustainability nexus.

Table 1: Summary of Key Studies on Generative AI and Sustainable Consumer Behavior

Author (Year)	**Context**	**Method**	**Key Findings**	**Relevance**
Dwivedi et al. (2023)	AI in marketing	Conceptual review	Generative AI enhances personalization but raises ethical risks	Core theoretical base
Floridi et al. (2018)	Ethical AI	Normative framework	Transparency and explainability critical for trust	Ethics foundation
George et al. (2021)	Digital sustainability	Conceptual	Digital tech enables sustainable systems	Sustainability theory
Delmas & Burbano (2011)	Greenwashing	Empirical	Misleading sustainability claims erode trust	Greenwashing risk
Bleier et al. (2018)	Personalization	Empirical	Personalization improves decision quality	AI mechanism
Carrington et al. (2014)	Sustainable behavior	Empirical	Attitude–behavior gap persists	Justifies AI role

Research Methodology

The research an approach is the systematic literature review (SLR) approach that is used to analyse how generative artificial intelligence can be utilized to foster sustainable consumer decision-making. This research especially calls a systematic review which allows the systematic identification, evaluation and synthesis of knowledge regarding the interdisciplinary fields (Tranfield et al., 2003). Considering the novelty of generative AI and the disjointed condition of the research connecting AI with sustainability and consumer behavior, an SLR offers a powerful and clear way of bringing the existing evidence together and creating a conceptual picture of the phenomenon.

Systematic literature reviews are common in the management and information systems research to create theory, define research gaps, and develop conceptual frameworks (Kitchenham, 2004; Paul and Criado, 2020). In contrast to narrative reviews, SLRs are conducted in accordance with strict guidelines, which reduce bias in research work and contribute to the high reliability and reproducibility of the results.

Research Design

The research design is qualitative and secondary-data-based; the research uses only academic and institutional publications as sources. The review focuses on conceptual and empirical research related to generative AI, sustainable consumption, digital transformation, and ethical AI. The evidence-based methodology was informed by the Tranfield et al. (2003) evidence- based management model, which involves three major phases: Planning the review, Conducting the review, and reporting and dissemination. The methodological rigor and synthesis of knowledge is achieved in this structure.

Data Sources and Search Strategy

In order to be more comprehensive in terms of covering high-quality literature, data were searched in several academic databases, such as:Scopus, Web of Science (WoS),Google Scholar and ScienceDirect (Elsevier), etc. The selection of these databases was due to the fact that they index the top journals in the field of management, marketing, sustainability, information system, and digital innovation.

A systematic key word search strategy was used with the help of Boolean operators. The primary search terms were the combinations of the following keywords: Generative Artificial Intelligence, Artificial Intelligence AND Sustainability, Sustainable Consumption, Digital Sustainability, Ethical AI, AI AND Consumer Trust.

Data Analysis Technique

Thematic analysis was used to analyse the retained articles as a qualitative technique that can be applied when one wants to find patterns, themes, and conceptual connections among vast volumes of textual information (Braun and Clarke, 2006).

All articles were hand coded using important keywords that included: Generative AI features, Consumer trust, Sustainability communication, Ethical challenges and Decision-making mechanisms. Finally, mainly four major themes were gained through the use of iterative coding, i.e, Individualization, sustainability consciousness, Quality of information and transparency, Consumer confidence, and Risks of AI-powered greenwashing.

Reliability and Validity

A number of reliability and validity steps were taken to increase methodological rigor with the help of Triangulation of sources with the help of using multiple databases and publishers. Peer- reviewed articles were focus in accessing the contents from the reputed journals. Paul and Criado (2020) note that these practices go a long way in enhancing the believability of systematic reviews in management studies.

Findings and Discussion

The four predominant and also interconnected themes in the systematic review that form the impact of generative artificial intelligence on the sustainable consumer decision-making process are: (1) personalisation and sustainability awareness, (2) transparency and information quality, (3) consumer trust and ethical perceptions, and (4) the threat of AI-driven greenwashing. All of these themes help to identify both generative and constraining purposes of generative AI to foster sustainable consumption and offer a comprehensive insight into socio-technical processes that facilitate AI-mediated consumer behavior.

Individualization and Sustainability Consciousness

Among the most visible results of the review, I want to mention the role of generative AI in improving sustainability awareness in personalization. Generative AI systems can process large volumes of consumer data, such as browsing history, purchase patterns, demographic data, and psychographic profiles and produce customized content and suggestions (Davenport et al., 2020). This individualization plays a major role in enhancing the relevance and salience of the sustainability information, which in turn affect the consumer cognition and attitudes.

Past researches on digital marketing have already identified that perceived usefulness, engagement, and quality of decisions improve with the use of personalized communication (Bleier et al., 2018). Generative AI can be used in the sustainability context by personalizing messages in environmental impact, ethical sourcing and social responsibility based on the values and preferences of individual consumers. As an illustration, an AI-based assistant can focus on carbon footprint reduction among green minded consumers, whereas on fair trade and socially minded consumers.

Moreover, personalization will help to bridge the attitude-behavior gap in sustainable consumption (Carrington et al., 2014). High percentages of the consumers show good sentiments in regard to sustainability yet they do not follow up on them because they do not have a guideline to do so. Generative AI offers contextual advice, thus decreasing the amount of cognitive load and aiding the behavioralization of sustainability ideals.

Nevertheless, the review also points to the fact that extreme personalization can result in the process of algorithmic nudging and manipulation of behavior. Although nudging has the advantage of encouraging pro-environmental behavior, there is also a concern of consumer autonomy and informed consent (Thaler and Sunstein, 2008). Thus, it should be a personalization that will make consumers feel in control and not dominate them.

Transparency and the Quality of information

The second significant theme created during the review is the way generative AI can enhance transparency and the quality of information. Sustainable consumption involves availability of attestable, precisely and understandable data regarding the life cycles of products, the effects they have on the environment, and ethical guidelines (Delmas and Burbano, 2011). Nevertheless, sustainability information tends to be disintegrated, technical and not accessible to regular consumers.

Generative AI is a solution to this problem, and it generates simplified narratives, summaries, and explanations using complex data sets. As an example, one can have AI systems that summarize sustainability reports, create ESG dashboards, and interpret environmental metrics in simple language. This role contributes to a significant decrease in the information asymmetry and cognitive overload as the two significant obstacles to sustainable decisions (Joshi and Rahman, 2015).

The results indicate that generative AI is a cognitive mediator between companies and customers. AI improves the capacity of consumers to assess sustainability claims provided by the companies and to compare alternatives by converting technical sustainability information into easily understandable materials. This is aligned with the concept of the limited rationality where consumers are known to have a limited cognitive capacity and have to make decisions based on heuristics and other external aids (Simon, 1957).

In digital sustainability, AI-facilitated transparency helps (George et al., 2021) create accountability and stakeholder involvement. Consumers have the likelihood of being able to keep firms responsible of environmental and social performance in cases where they can easily access and understand the sustainability information. This provides sustainable business practice pressure in the market.

Nevertheless, transparency is not only based on the availability of information but also the integrity of information. The review emphasizes that generative AI systems can produce credible but incorrect or unprovable information especially where the training information is biased or incomplete (Dwivedi et al., 2021). This brings out a paradox of the fact that AI makes the volume of information higher and information reliability can be compromised.

AI-Threatened Greenwashing

Another important, even contradictory, discovery of the review is that generative AI has the potential to increase the intensity of greenwashing. Greenwashing is defined as a process of deceiving the consumers concerning the environmental performance of the products or organizations (Delmas and Burbano, 2011). Using a few human interventions, generative AI is capable of creating convincing, emotionally resonant, and apparently credible sustainability stories.

Although these kinds of stories might make consumers more engaged, they also make them more prone to misinformation and deception. The AI-created sustainability content can be overly positive about the environment, it can either ignore the negative outputs or show only the positive one, or be selective in terms of information presentation. This brings a moral conflict in which AI will serve as an instrument of symbolic and not substantive sustainability.

Literature indicates that greenwashing will destroy the faith of the consumer and create a long-term damage to the reputation of companies (Delmas & Burbano, 2011). Greenwashing is also harder to notice in the context of AI mediation because the information seems reliable and supported by facts.

This discovery brings serious governance issues. Unless there is regulation and auditing in place, generative AI can be used to shape sustainability perceptions instead of the actual change in behavior. This is against the intended principles of digital sustainability and ethical AI.

Critically speaking, this theme brings out the political economy of AI. Generative AI is shaped and managed by the major technology companies, whose interests do not necessarily correlate with the sustainability agenda. So, AI is not an asset of a neutral technology but an element of a socio-political mechanism that is present in power dynamics (Zuboff, 2019).

Integrative Discussion

All four themes prove that generative AI has a twofold purpose in sustainable consumer decision-making. On the one hand, it performs the enabling role by bolstering the personalization, transparency, and access to information. Conversely, it brings forth some new ethical risks connected to trust, manipulation, and greenwashing.

This duality is indicative of the larger conflict on the digital transformation literature between the optimistic technological side and the critical skepticism (George et al., 2021). Although digital technologies present new possibilities of sustainability, they also present new sources of inequality and surveillance, as well as control.

The results imply that generative AI must be viewed as a socio-technical mediator as opposed to a straightforward and easy way to use technology. Its effects on sustainability are based on institutional governance, ethical design, regulatory controls and cultural settings.

Theoretically, the findings unite the findings of:

- Technology Acceptance Model (Davis, 1989)
- Trust Theory (Morgan & Hunt, 1994)
- Digital Sustainability (George et al., 2021)
- AI Ethics (Floridi et al., 2018)

The integration adds to the existing literature by establishing trust and ethics as the key processes that mediate the association between AI adoption and the sustainability outcomes.

Contribution to Existing Literature

Three contributions are made in this study.

First, it expands the sustainability literature and proposes generative AI as a unique category of analysis. The research undertaken until now examines AI in general, but the current paper will specifically consider generative models and their peculiar features.

Second, it adds to the body of knowledge in consumer behavior research by defining trust and ethical perception as key mediators in sustainable decision-making based on AI.

Third, it contributes to the digital transformation research by addressing the socio-ethical aspects of AI-mediated sustainability that goes beyond a technical or managerial approach to it.

Conceptual Framework

According to the systematic review and thematic synthesis, this paper suggests a conceptual framework that provides understanding of the value of generative artificial intelligence in facilitating sustainable consumer decision-making. The framework incorporates technology adoption, trust theory, and sustainability constructs to help explain the socio-technical processes by which generative AI is able to affect consumer outcomes.

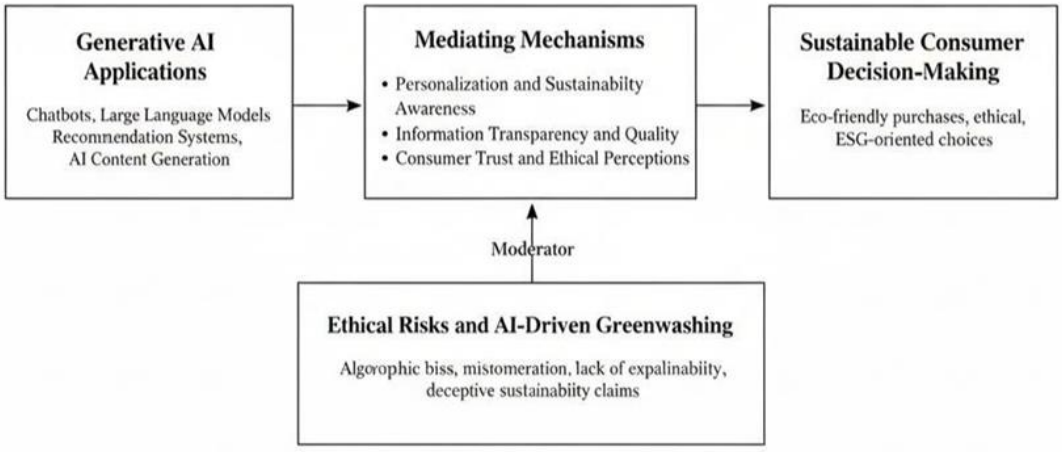

Figure 1. Framework of Generative AI and Sustainable Consumer Decision- Making

The framework proposed makes an independent construct of Generative AI Applications, which is operationalized through such features as AI-generated content, intelligent decision- support systems, conversational agents, and personalized recommendations. These applications have a bearing on Sustainable Consumer Decision-

Making, which is considered as the intention and the capacity of consumers to buy products and services that reduce negative environmental impact and increase social value.

Role of Generative AI in Promoting Sustainable Consumer Decision- Making

This framework illustrates how generative AI applications influence sustainable consumer decision-making through three key mediating mechanisms: personalization and sustainability awareness, information transparency and quality, and consumer trust and ethical perceptions. The relationship is moderated by ethical risks and AI-driven greenwashing, which may weaken the positive effects of generative AI on sustainability outcomes.

Personalization and awareness show the ability of generative AI in providing a personalized sustainability information based on the profile of each consumer, thus becoming more relevant and more thought-provoking. Information transparency describes the capacity of the AI systems to lessen information asymmetry through converting the intricate sustainability information into readable understanding. The affective and normative evaluation of AI systems is consumer trust and ethical perception, which determines whether consumers will or will not take AI-generated recommendations.

Ethical Risks and Greenwashing are also added as moderating variables to the framework. The above-mentioned aspects undermine the good intentions of generative AI since they raise the issue of misinformation, algorithmic bias, and false pretensions about sustainability.

The conceptual model is based on Digital Sustainability Theory (George et al., 2021) that states that digital technologies can only bring about sustainability results when integrated into ethical governance and institutional accountability. It is also in line with the Socio-Technical Systems Theory which points out that social norms, organizational procedures and regulatory frameworks influence the impacts of technology.

The presented framework introduces the concept of generative AI as a key mediating technology and emphasizes trust and ethics as the essentials of the boundary condition.

Limitations and Future Research Directions

This study has a number of limitations, even though it has made contributions.

To begin with, the paper is based on secondary data. Although this allows the generalization of theory, empirical generalization is restricted. Primary research techniques should be used in future research, which include surveys, experiments, and longitudinal designs.

Second, the review is oriented on the international literature, with little emphasis made on the regional and cultural variations. The level of consumer trust in AI might differ greatly between developing and developed economies.

Third, generative AI is considered a homogenous category in the study. The next-generation research must distinguish among the individual models (e.g., ChatGPT, Gemini, Claude) and areas of application (e-commerce, finance, healthcare).

Possible future research directions are:

- The experimental research on AI explainability and trust in sustainability.
- Analysis of AI acceptance cross-culturally.

- Behavior changes longitudinal studies.
- Neuroscience and behavioral analytics mixed-method designs.

Conclusion

This paper is an investigation of the application of generative artificial intelligence in facilitating the sustainable decision-making of consumers by using an extensive, systematic review of the secondary literature. The results show that generative AI is an influential socio-technical mediator that affects consumer awareness, information processing, the formation of trust, and ethical reasoning.

Generative AI makes life more personalized, increases the quality of the decisions and the level of transparency; however, ethical risks in the form of greenwashing, manipulation, and the lack of algorithmic transparency also emerge. The success of AI in ensuring sustainability is thus not limited to the level of technology but ethical governance, institutional regulation, and accountability of stakeholders.

The paper adds to the digital sustainability literature because it shows meaningfulness of generative AI as an opportunity and a threat. It demands that we move beyond techno-optimism to ethically based digital change where AI systems are made to be oriented to long-term societal and environmental objectives.

References

[1] Belz, F. M., & Peattie, K. (2012). Sustainability marketing: A global perspective. Wiley.

[2] Bleier, A., De Keyser, A., & Verleye, K. (2018). Customer engagement through personalization. Journal of Service Research, 21(3), 292–307.

[3] Bocken, N. M. P., Short, S. W., Rana, P., & Evans, S. (2014). A literature and practice review to develop sustainable business model archetypes. Journal of Cleaner Production, 65, 42–56.

[4] Brown, T. Et al. (2020). Language models are few-shot learners. Advances in Neural Information Processing Systems, 33, 1877–1901.

[5] Davenport, T. H., Guha, A., Grewal, D., & Bressgott, T. (2020). How artificial intelligence will change the future of marketing. Journal of the Academy of Marketing Science, 48(1), 24–42.

[6] Davenport, T. H., Guha, A., Grewal, D., & Bressgott, T. (2020). How artificial intelligence will change the future of marketing. Journal of the Academy of Marketing Science, 48, 24–42.

[7] Delmas, M. A., & Burbano, V. C. (2011). The drivers of greenwashing. California Management Review, 54(1), 64–87.

[8] Dwivedi, Y. K. Et al. (2021). Artificial intelligence (AI): Multidisciplinary perspectives. International Journal of Information Management, 57, 101994.

[9] Dwivedi, Y. K. Et al. (2023). Generative AI: Opportunities and challenges. Journal of Business Research, 156, 113–124.

[10] Dwivedi, Y. K., et al. (2023). So what if ChatGPT wrote it? Journal of Business Research, 162, 113843.

[11] Floridi, L. et al. (2018). AI4People—An ethical framework for a good AI society. Minds and Machines, 28, 689–707.

[12] Floridi, L., et al. (2018). AI4People—Ethical framework. Minds and Machines, 28(4), 689–707.

[13] George, G., Merrill, R. K., & Schillebeeckx, S. J. (2021). Digital sustainability. MIS Quarterly, 45(1), 1–24.

[14] George, G., Merrill, R. K., & Schillebeeckx, S. J. D. (2021). Digital sustainability. Organization & Environment, 34(1), 1–27.

[15] Goodfellow, I. et al. (2014). Generative adversarial nets. Advances in Neural Information Processing Systems, 27.

[16] Joshi, Y., & Rahman, Z. (2015). Factors affecting green purchase behavior. International Strategic Management Review, 3(1–2), 128–143.

[17] Kitchenham, B. (2004). Procedures for systematic reviews. Keele University Technical Report.

[18] Kumar, V. et al. (2021). Artificial intelligence in marketing. Journal of Business Research, 124, 230–244.

[19] Peattie, K., & Collins, A. (2009). Guest editorial: Perspectives on sustainable consumption. International Journal of Consumer Studies, 33(2), 107–112.

[20] Russell, S., & Norvig, P. (2021). Artificial intelligence: A modern approach (4th ed.). Pearson.

[21] Tranfield, D., Denyer, D., & Smart, P. (2003). Towards a methodology for developing evidence-informed management knowledge. British Journal of Management, 14(3), 207–222. UNEP. (2020). Sustainable consumption and production policies. United Nations.