

Digital Green Marketing and Certified Consumer Durables: A Tech-Driven Path to Sustainable Purchase Behaviour

Ishika Singhal¹ and Nagendra Sharma²

{ishikasinghal.09@gmail.com¹, nagendrasharmag@gmail.com²}

Department of Management Studies, Graphic Era Deemed to Be University, Dehradun, Uttarakhand, India^{1,2}

Abstract. In the rising environmental concerns and the worldwide quest of sustainability are changing consumer behaviour dramatically. Focussing particularly on certified consumer durables, this paper investigates the junction of digital technology and green marketing. As marketing strategies change with developments like Artificial Intelligence (AI), Augmented Reality (AR), and SEO-driven content, companies more and more use these technologies to promote environmentally certified goods and affect sustainable buying behaviour. Using a Systematic Literature Review and bibliometric analytic approach, this paper investigates how digital green marketing (DGM) techniques affect consumer purchase intentions for certified durable products like electronics, cars, and appliances. By means of a synthesis of scholarly literature and the identification of dominant research topics, the study emphasises important elements like perceived product quality and sustainability perception. The study looks at how the Theory of Planned Behaviour affects consumer decision-making mechanisms. Results show that DGM closes the knowledge gap on product certifications and increases consumer confidence and brand awareness. The paper ends with practical advice for marketers seeking to encourage sustainable consumption by means of technology-driven projects. This work adds to the increasing conversation on digital sustainability and provides a thorough framework for including eco-friendly values into technology-driven marketing strategies, hence opening the path for a more responsible and environmentally aware consumer market.

Keywords: Digital Green Marketing, Certified Consumer Durables, Systematic Literature Review, Purchase Intention.

1 Introduction

A significant transformation is undergoing in the marketing landscape in 21st century driven by two critical forces namely sustainability and digitalization. Consumers while shaping their choices does not depend on the traditional marketing tactics but the brand's environmentally responsible digital presence. When considering the pursuit of sustainable development, the two concerns of paramount importance are reducing inequalities and protecting the environment. There is a reciprocal relationship between these goals, as actions in one aspect get outcomes affected in the other aspect. [1] The health issues at the community or the individual level are the results of the environmental difficulties. This makes customers very careful in shaping their preferences, purchases and attitude towards the environment. When speaking of the concerns that have adverse effects on the environment, involving processes of procurement, production, manufacturing, distribution and transportation gave rise to the introduction of eco-friendly products, popularly known as "green" products. [2] The products that have gained importance

in recent times, which cause minimised harm to the environment and whose production process (gas emissions) and distribution are optimised, are called green products. As we observe that our resources are scarce and limited, utilising them diligently and efficiently is the need of the hour and a way out for the companies to proceed in the competitive world. When talking about the resources and environmental consciousness, consumers have shifted their preferences towards sustainable goods, resulting in manufacturers producing those offerings that are environmentally friendly. All these, as a result, gave rise to communicating all the efforts involved in promoting sustainability, bringing “green marketing” into existence. The authors Hennion and Kinnear in 1976 defined green marketing as a process that involves marketing operations that contribute in offering a solution for environmental concerns. A set of facts have been published by New York Times that says tens of billions is spent every year and people, agriculture and animals are harmed by air pollution in United States which is very alarming [3,4]. Digital Green Marketing (DGM) has emerged as a powerful strategy to promote such sustainable consumption. It combines digital marketing tools with green messaging to influence purchase behaviour in favour of certified consumer durables that are endorsed by recognized eco-labels and certifications. Despite its growing relevance, there remains a lack of comprehensive understanding of how DGM influences consumer decisions in the context of certified consumer durables. The integration of digital technologies like Search Engine Optimization (SEO), Artificial Intelligence (AI), Augmented Reality (AR), and social media in green marketing initiatives have played a vital role in assisting automation and sustainability.

1.1 Research Gap

The existing literature considers green marketing and digital marketing in isolation and very few studies integrate both to analyse how digital tools influence sustainable consumer behaviour. Fast moving consumer goods and fashion have received considerable presence research of green marketing but research in certified consumer durables remain unexplored. The research is prominently increasing but there is a lack of empirical evidence on the digital green marketing in consumer durables market.

1.2 Objective

The objective of this paper is to systematically review the existing literature on digital green marketing and consumer behaviour related to certified consumer durables. By increasing the sustainable digital presence of the certified consumer durables, it will provide a clear pathway for consumers in shaping their attitude and purchase intention. By identifying the role of green certifications in enhancing the effectiveness of digital green marketing this study will help analysing its influence. The exploration of the technological tools such as AI, blockchain, and social media used in Digital green marketing initiatives the paper aims to provide clusters and themes that will help to address the related issues. Additionally, this study explores how adherence to digital green marketing strategies fuels perceived product quality and environmental sustainability, which in turn reinforce consumer buying decisions.

- RQ1. How does Digital Green Marketing influence consumer purchase intentions towards certified consumer durables?
- RQ2. What role do green certifications and digital technologies play in shaping sustainable consumption behaviour?

The study comprises five sections: Section 2 presents a literature review conducted using a systematic literature review; Section 3 details the methodology employing bibliometric analysis

and thematic analysis; section 4 reveals the results that elucidate the themes and future trends, followed by Section 5, which contains the conclusion. The fig below 1 reveals the growth of the green marketing leveraging technology and boosting the importance of research in the area over the years.



Fig.1. Source: Scopus.

2 Literature Review

The existing literature is thoroughly studied and analysed by conducting a systematic literature review. a systematic literature review is a well-planned methodology that utilises databases to gather and retrieve results in the research and assist in targeting the objective and theoretical discussions in a specific topic. [5] The keyword combination done mentioned in table 1. This study utilised Scopus and google scholar database to review articles of the relating literature to bring our emerging themes and a conceptual framework. Table 2 shows the list of studies on green marketing and consumer behaviour with key findings.

Table 1. Search Results for Green Marketing Research Keywords.

keyword	First search	Final result
“Green marketing” AND “technology”	209	191
“Green marketing” AND “purchase intention”	258	256

Table 2. List of Studies on Green Marketing and Consumer Behaviour with Key Findings.

S.No.	Author	Year	Objective	Method	Findings
1.	Jacob Cherian et al [18]	2012	This study tried to address the evolved consumer attitude by looking into various ways and giving concepts that relates to green marketing.	Literature review and conceptual framework	It is been highlighted that organizations are not achieving success because of lack of awareness of the consumers relating to green knowledge. Also, the appropriate lack of communication is the major reason that resulted in commercial failure of environmentally sustainable products.
2.	Dr. Noor Un Nisa et al [19]	2022	The goal was to communicate the disparity in shopping behaviour of environmentally concerned consumers and assess the studies on greenwashing, green consumer confusion, green risk, and green trust.	Literature review	This study proposes and recommends that in order to increase customers' trust the practice of greenwashing should be limited to address environmental issues.
3.	J thogersn [20]	2010	This study developed and utilised a conceptual framework focusing on ecolabelling for understanding consumer responses.	Emprical study: Mall-intercept survey	The findings suggest that the adoption of the new ecolabels depends on the intention to buy and the ability relating to issue-relevant study.
4.	Delmas et al [21]	2014	To analyse the eco labelling and eco	Correlation and survey.	It highlighted that eco labelled products are affordable as

			certification separately in order to seek benefits like improved reputation and product quality.		compared to eco certification products that involve premium pricing.
5.	Paul et al [22]	2016	This study validated the use of TPB and TRA to predict Indian consumers' green product purchase intention.	Conformity factor analysis and empirical results of SEM	This study conveys that purchase intention is not affected by subjective norms but attitude and perceived behaviour.
6.	Botea-Muntean et al [23]	2024	It covers the relevance and impact of sustainable and AI-assisted promotion techniques, which are both ecologically beneficial, efficient and creative.	Questionnaire method	The significant impact of Artificial intelligence and digital transformation is observed in shaping consumer buying attitude towards ecological marketing.
7.	Nozari et al [24]	2021	This paper presented a clear vision of smart, sustainable marketing based on the IoE in the FMCG industry.	Case Study and Expert Interviews.	The results show that activity and predictive capabilities of social media as one of the most effective tools of sustainable marketing efforts, IoE in present day has the most influence.sss
8.	Byrum et al [25]	2019	This paper discusses how message carriers might be used to transmit corporate social	ANOVA	This study confirms the successful application of news releases and articles in place of social media advertising.

			responsibility information so fostering eco-purchasing participation.		
9.	Dong et al [26]	2025	This study addresses the gap by examining consumer preferences for maintaining the status quo versus switching in the scenarios involving different stages of trust construction.	Conjoint Analysis	The results indicate the effectiveness of ecological certifications is generally higher than food chain brands and is more likely to emerge as the dominant attribute triggering decision switching during the reconstruction of abstract trust.
10.	Vo et al [27]	2024	The aim of this study is to investigate factors, including those related to online or e-commerce platforms, that influence Gen Z's purchasing intentions regarding corporate environmental initiatives, providing valuable insights for organizations	Survey Method-SMARTPLS	Based on the research findings, the authors propose solutions to promote Gen Z's online purchasing behaviour towards environmentally friendly products through electronic platforms.

3 Methodology

The research was conducted while occurring various steps. The first step was selection of the search engines for selecting the research articles. Our study utilised “Scopus”, “web of sciences” and “google scholar” databases for achieving the purpose. These are widely recognized academic databases that enables access to scholarly articles and citation tracking. The second step proceeds with formation of the basis for which the existing research has to be focused. The

attempts of this study are to include searches connecting green marketing and technology and durable goods. Now for this, papers including green marketing and digital technology, studies that promotes sustainability and consumer buying behaviour and studies that include the challenges and implications of green marketing in digital era. [8] Followed by the last and the fourth step that involves collection and filtration of data from the selected articles, creation of fig 2 and analysing and interpreting results, posing the future directions and conclusion to the study. [2]

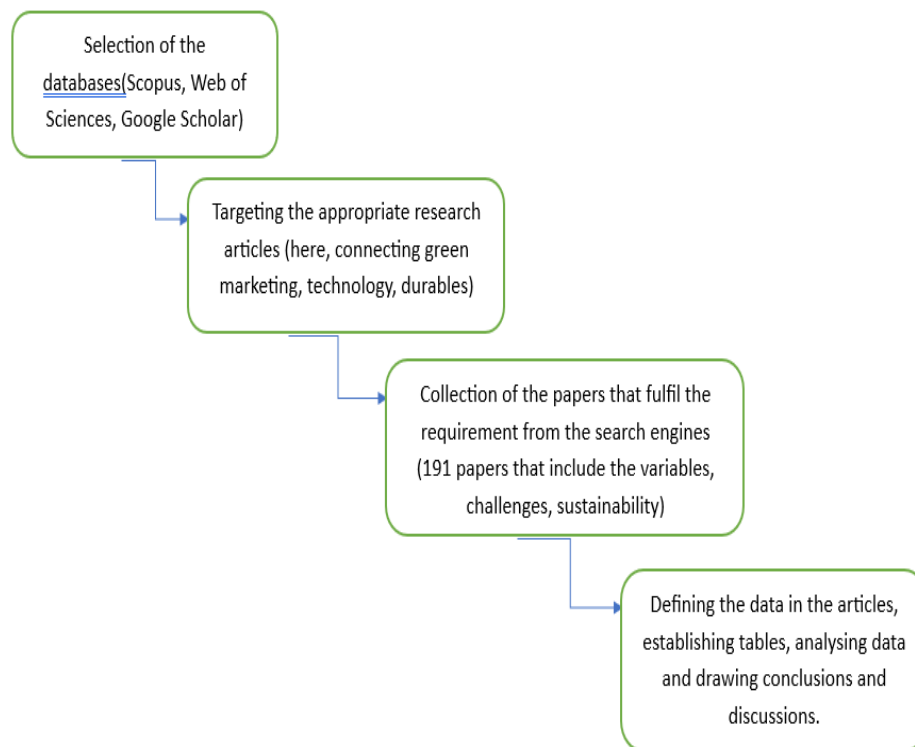


Fig. 2. Research Article Selection Process.

3.1. Systematic Literature Review:

The study utilised Systematic Literature Review to review the existing literature and researches done on the topic using the databases. The keyword combination mentioned in table2 was leveraged to gather the comprehensive Knowledgeable studies. The inclusion criteria used the peer-reviewed articles 2010-2025 year and in the English language and focusing on digital marketing strategies and certified durables.

3.2 Bibliometric Analysis:

The study “**Digital Green Marketing and Certified Consumer Durables: A Tech-Driven Path to Sustainable Purchase Behaviour**” uses bibliometric analysis to identify the highly cited publications using the keyword combination mentioned in the table 2 which helps to identify the underlying gaps and the modern approaches in the paradigm of marketing that aims to focus on sustainability, digital tools and measuring the consumer behaviour.[6] This analysis is done by leveraging Vos Viewer as shown in fig 3 that shows the importance of emerging concepts and highlights various related networks.

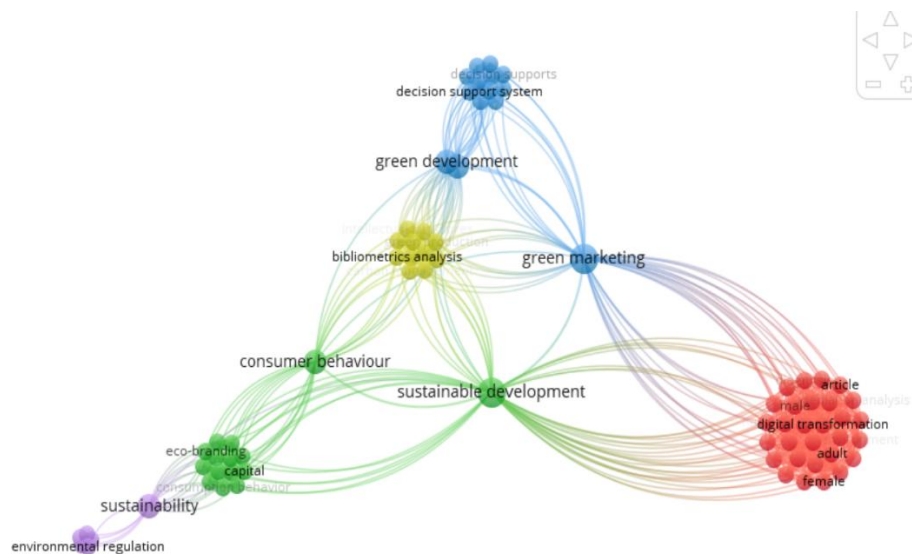


Fig. 3. Bibliometric Network Analysis.

3.3 Thematic Analysis:

Thematic Analysis is a comprehensive technique for identifying, analysing and divulge themes within dataset. It describes and minimally organizing dataset in detail. It includes the further exploration of various topics of research. [7] Initially, it starts with a rigorous process of conversion of codes into data, categorizing those codes into potential themes, reviewing and refining those themes, and finally defining and naming them for reporting.

4 Result

4.1 Thematic Analysis

The visual representation of the network map in fig 4 highlights the themes and concepts and the correlations between the key essence of the study and arranges the terms into different categories so complementing the focal directions seen in recent years in both academic and industrial debates. The connections show the co-occurrence relationship between these themes, with their size indicating the frequency of occurrence for each theme as shown in table 3[9]

Table 3. Main Ideas and Learnings About Using Digital Tools for Green Marketing.

Theme	Key Insights	References
Digitalization of Green Messaging	To communicate the sustainability efforts and commitments, this theme explores how the companies utilize the digital channels. A shift is been observed in the traditional product information into interactive storytelling by leveraging websites, mobile applications, Augmented reality or virtual reality experiences and QR code scanning on the packaging of the products. Also, it has been explored that multimedia content enables brand recall. Companies like IKEA and LG use digital content to explain their certifications.	[10], [11]
Impact of Eco-Certifications on Consumer Trust	The perceived credibility of the green claims gets increased by their party certifications such as Energy star, eco labels, ISO 9001.the transparency offered by the certifications also reduces consumer skepticism that is disseminated by digital platforms. Certification claims have been validated and fostering trust by enabling block-chain based traceability systems and IoT enabled product histories.	[12] ,[13]
Social media as a Catalyst for Sustainable Choices	Eco- conscious communities are widely affected by the social media initiatives. Brands are focusing to create green value of their offering with customers by storytelling, influencer partnerships and user-generated content through platforms like Instagram, Facebook and You tube. Even the hashtag campaigns, review battle, product tutorials and authentic endorsements assist in gaining virality, awareness and consumer engagement.	[8],[14]
Behavioural Theories Applied to Green Digital Campaigns	The theories like Theory of Planned Behaviour (TPB), Elaboration Likelihood Model (ELM), and Value-Belief-Norm Theory (VBN) are utilized to comprehend how digital interventions influence green behaviour. Intention to buy certified durables is significantly predicted by online message framed around perceived behavioural control, subjective norms, and attitudes. Personalisation through AI chatbots and recommender systems customised to eco-preferences also promotes TPB aspects.	[15],[16]
Barriers and Enablers to Tech-Driven Sustainable Purchase	Despite of the technological innovations, there are some existing obstacles that include information overload, digital illiteracy, and greenwashing. Many times, customers find it difficult to tell between real certifications and shallow assertions. Gamification—such as sustainability points, digital badges—eco-	[17]

friendly prizes via apps, and AR-based in-store experiences—are among enablers. Researches show that hybrid (online + in-store) digital technologies increase sustainability alignment and decision-making effectiveness.



Fig. 4. Future Trends: Insights into the Digital Green Marketing Tools.

Source: Author

Brands provide behind-the-scenes material highlighting eco-friendly production or sustainable sourcing. Hashtags such as #GoGreen, #SustainableLiving, #CertifiedGreen help to promote Sharing "green challenges" or consumer testimonials—for instance, how people conserve energy using a certified item. [8] Working with green lifestyle bloggers, environmental activists, or eco-conscious influencers to spread sustainable products to their audiences. Promotes brand reputation and word-of-mouth confidence. [14] Product labels integrated with QR codes let buyers scan to get thorough sustainability information, certifications, origin data, carbon footprint statistics, and recycling instructions. Verifying green assertions closes the trust gap. Gives the item's material use traceability. [10] Personalised eco-product recommendations depending on past purchases, geography, or browsing behaviour. Real-time responses to sustainability questions via chatbots. AI-curated email marketing featuring certified product bundles and green living advice. [11]

5 Discussion

Theoretical implications

The integration of theory of planned behaviour and digital touchpoints is contributing to the theoretical insight of the study. The Theory of Planned Behaviour (TPB) predicts behavioural intentions using attitude, subjective standards, and perceived behavioural control. [15] the concepts have experienced a shift through blending in with digital technologies. [8] Subjective norms: social media promotes eco-friendly peer pressure. Friends and influencers promoting

sustainable appliances shapes social expectations. Perceived Behavioural Control: Mobile apps, QR codes, and interactive dashboards give users real-time energy consumption information and control, improving their perceived ability to make sustainable decisions. These digital interventions strengthen the TPB model by increasing customer empowerment, information availability, and product claim clarity. This study adds two mediating constructs related to green certified durables marketing to TPB: Consumers can evaluate certified items' green value, performance, durability, and dependability using digital evaluations, AI suggestions, and unboxing videos. Sustainability Perception: Eco-labels, certifications, and QR codes boost consumers' environmental awareness and buying intent.

5.1 Practical implications

Digital Strategies of Marketers involves: Certified durables marketers should employ digital green messaging across the customer journey to foster confidence. From our findings, necessary strategies include developing genuine user-driven material with green influencers embedding dynamic certifications via apps and QR codes. [10] By use of thought and assessment, these strategies raise awareness and inform consumers. A QR link on a product label launches a manufacturing sustainability video. This increases openness and credibility, particularly for environmental claims consumers occasionally discover perplexing or exaggerated. [13] Tools are absolutely necessary for bridging the knowledge gap, building consumer trust, creating an immersive, guided decision-making experience.

6 Conclusions

This study explains how Digital Green Marketing helps people choose eco-friendly products. Using tools like AI, AR, SEO, and social media, companies build trust and spread awareness about certified green products. Certifications help people believe the products are truly good for the environment. Digital tools make it easier for customers to understand and trust these products. The study suggests that businesses should use honest digital methods to promote green products and support sustainable shopping.

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