

A Systematic Literature Review on Sustainable Marketing: Trends, Challenges, And Future Directions

Anusree C V¹, Dr. Siraj P P²

¹Research Scholar, Sir Syed college, Taliparamba, Kannur University

²Assistant Professor, Sir Syed college, Taliparamba

Abstract:

Rapid advancements in digital technology have transformed marketing strategies and given businesses creative ways to interact with customers while maintaining sustainability. This paper specifically examines the relationship between digitalisation and environmental, social, and economic sustainability. The results suggest that big data analytics, blockchain, and artificial intelligence (AI) can be leveraged to develop sustainable business models and foster ethical consumption. This review includes 430 research articles from the time frame between 2020 and 2024, which were indexed in the Scopus database and analysed following PRISMA guidelines. Additionally, the study highlights the role of data analytics, blockchain, and artificial intelligence in improving transparency and traceability within the organic food sector. The analysis concludes with a research agenda that calls for multidisciplinary, policy-interventionist and technologically inventive initiatives to advance sustainability in the digital economy.

Keywords: sustainable marketing, corporate success, digital economy, and systematic literature review.

INTRODUCTION

New business models that use data, connectivity, and online platforms to generate previously unreachable value are a result of the digital economy's emphasis on information and communications technology (ICT) in economic activity (Stancu et al., n.d.). Artificial intelligence, influencer marketing, digital currency, and platform business models are all used in the digital economy to increase efficiency and growth. It is characterised by mobile and internet technologies that power the creation, distribution, storage, and use of goods and services (Creation and Measurement of Economic Activity Towards GDP in the Digital Economy, n.d.). The digital economy has transformed the way companies do business, engage with customers, and create marketing campaigns. The digital economy has a big influence on marketing since it forces tactics to change to include digital channels and technologies (George Papageorgiou et al., 2020). Combining digital marketing endeavours with traditional marketing channels results in initiatives that are successful and cohesive (Chowdhury, 2024).

Integrating digital tactics is crucial for competitiveness, since new developments like artificial intelligence (AI) and machine learning have the potential to transform marketing strategies and help businesses meet changing customer demands in a digitally-driven economy (Chowdhury, 2024). Effective marketing communications need to change to fit this connected world, as more and more business organisations conduct their operations online (Papageorgiou et al., 2020). To incorporate environmental issues into the

product lifecycle, businesses are incorporating sustainable concepts into their marketing strategies (Erni Widiastuti et al., 2024).

The move towards value-based marketing reflects consumer preferences for ecological and ethical products (Aziz Hanif Mahfud et al., 2024). Companies now have the potential to apply more sustainable and environmentally friendly marketing strategies. But whereas digitalisation holds enormous potential for improving sustainability, it also poses threats in the form of data privacy issues, digital waste, greenwashing, and the digital divide. It is important to understand how companies can use digital technologies to build a more sustainable marketplace to ensure long-term economic, social, and environmental prosperity. Sustainable marketing in the digital age is a term used to describe marketing that harmonises business development with social welfare and environmental sustainability.

METHODOLOGY

Review procedure

A literature review is a systematic assessment of previous publications on a particular topic to point out knowledge gaps and guide future study. Finding, choosing, assessing, and synthesising pertinent material are all steps in a methodical procedure. For academics and researchers to expand on previously published material and avoid misconceptions in their work, this practice is essential ((Chigbu et al., 2023). This work is an SLR (Systematic Literature review), which follows a systematic procedure and includes several essential elements to ensure an unbiased and trustworthy evaluation of the articles.

RESEARCH QUESTIONS

1. How do digital technologies contribute to sustainable marketing practices?
2. What are the primary business challenges to adopting sustainable marketing practices within the digital age?
3. What are the future trends and directions in sustainable marketing within the digital economy?

Search Strategy

The selection process consists of three parts. First coming up with a search phrase for one of the most widely used databases worldwide, the Scopus database (“SLR,” 2023). Relevant literature on “digitalisation and sustainable marketing” is located in the Scopus database using a well-crafted search query. This approach ensures that variants in language are included for digitisation and focuses on research where these phrases appear in the title, abstract, or keyword. The strategy preserves specific sustainable business scenarios while capturing a wide range of relevant articles using Boolean operators (OR, AND) (Table 1 illustrates the Scopus search term used to construct the database).

Table 1: The Search String

SCOPUS	(TITLE-ABS-KEY ("digitalisation"OR"digital platforms" OR "technologies" OR "digital transformation") AND TITLE-ABS-KEY ("organic market" OR " sustainable market" OR "organic marketing" OR "green marketing" OR "sustainable marketing"))
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Source: Scopus search string

Screening

Refinements such as filtering by document type, subject area, language, and publication date can yield focused results (Table 2 lists the inclusion and exclusion criteria). The search results are then exported and

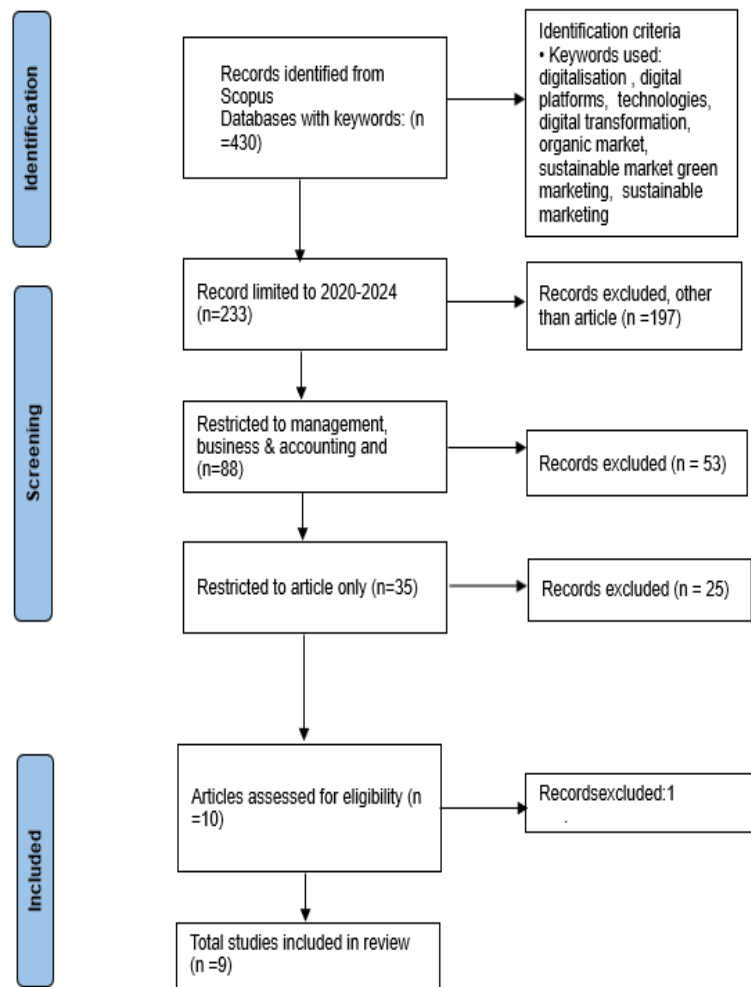
filtered for final selection based on abstract relevance and full-text review (open access).

Table 2: inclusion and exclusion criteria

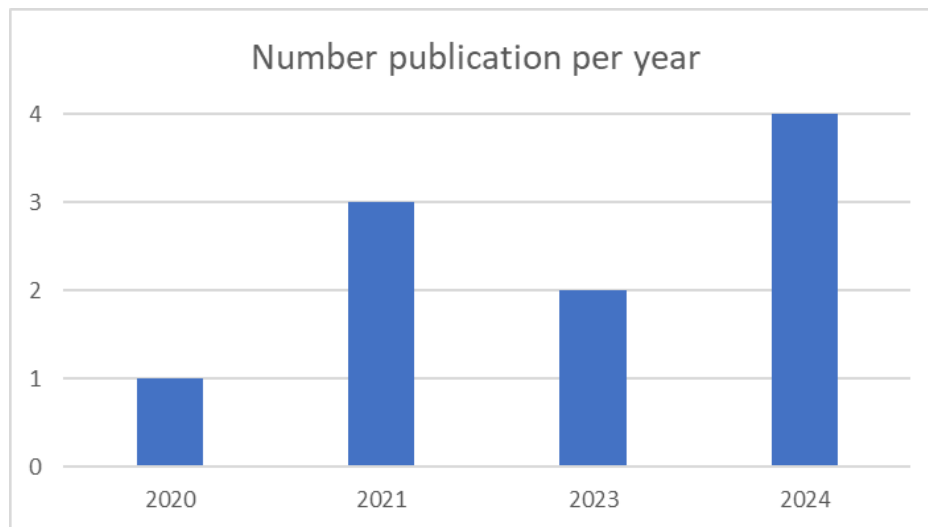
Criterion	Inclusion	Exclusion
Document Type	Article	book chapters and editorials, etc.
Language	English	Non-English
Timeline	2020-2024	<2020

Specific inclusion and exclusion criteria are used in the search strategy for locating pertinent papers to ensure the selection of high-quality, current, and easily available research. Book chapters and editorials are excluded to maintain academic integrity. Eliminate non-English works and restrict the search to English-language publications to overcome linguistic barriers. In addition, the period is limited to papers published between 2020 and 2024 to take into consideration of digitalisation in sustainable marketing. 9 papers were chosen as pertinent and helpful for the study after the Scopus search was completed using a range of search phrases and strings. Figure 1 displays the PRISMA flowchart for the complete procedure.

Figure 1: PRISMA



RESULTS



The bar graph, which shows a fluctuating but increasing trend, shows the number of publications on sustainable marketing from 2020 to 2024. In 2020, there was only one publication in 2021, there were three; and in 2022, there were none. With two papers in 2023, research interest picked back up, and in 2024, it peaked with four publications. Despite a brief drop in 2022, this pattern suggests that academic attention is shifting towards sustainable marketing.

RQ 1: How do digital technologies contribute to sustainable marketing practices?

Digital technologies play a critical role in promoting sustainable marketing practices across sectors through improved efficiency, waste reduction, and consumer interaction. In the banking industry, digitalization enhances marketing strengths through the use of customer relationship management (CRM), data-driven decision-making, and stakeholder collaboration (Acheampong et al., 2023). Online banking, mobile apps, and branchless banking enhance customer satisfaction and operational efficiency while lowering environmental footprints (Acheampong et al., 2023). Also, IoT sensors are central to supply chain tracking, food freshness detection, and facilitating proactive waste management (de Souza et al., 2021). Through the inclusion of these technologies, organizations across different industries can improve supply and demand equilibrium while supporting a more sustainable environment (de Souza et al., 2021; Acheampong et al., 2023).

Outside banking and retailing, digital technologies play a key role in supporting sustainable marketing practices among Lebanon's agri-food businesses (Davidavičienė et al., 2024). Digital technology facilitates precision agriculture, maximizing resource use and minimizing waste to minimize adverse environmental impact (Davidavičienė et al., 2024). Digital platforms inform consumers about sustainability efforts, encouraging the usage of eco-friendly products and green purchasing habits (Nazam et al., 2020). Blockchain technology provides greater supply chain transparency, enabling customers to identify product origins and environmentally friendly purchasing decisions (Davidavičienė et al., 2024). Social media sites and online marketing additionally promote engagement, enhancing consumer commitment to brand trust and participation in sustainability practices (Nazam et al., 2020). All these advancements in technology jointly facilitate local products promotion, reduced carbon footprint, and enhanced people relations, consequently leading to a sustainable agri-food industry (Davidavičienė et al., 2024; Nazam et al., 2020).

The relationship between sustainable marketing strategies and corporate success can be mediated by digital technology, which can also improve cost efficiency, personalise sustainable products, and encourage circular economy activities (Demessie & Shukla, 2024). Optimised logistics and distribution by companies minimise waste and carbon emissions while enhancing operational efficiency (Liu et al., 2024). Through these advancements, businesses can align their marketing strategies with sustainability goals and create a responsible, environmentally conscious marketplace (Huang et al., 2024); (Liu et al., 2024); (Nazam et al., 2020).

Social media platforms allow companies to engage consumers directly, creating more awareness for sustainability programs and driving buying choices (Huang et al., 2024). In addition, the blockchain technology provides transparency throughout the supply chain, which helps increase consumer confidence in sustainable brands (Davidavičienė et al., 2024).

By embracing these digital innovations, companies can easily gain marketing success while enhancing environmental stewardship (nurturing our planet for the future) (Liu et al., 2024); (Davidavičienė et al., 2024); (Huang et al., 2024);

Overall, the technologies collaborate in enabling organisations to form enduring collaborations with environmentally sound consumers and create a sustainable economy.

Table 3: Shows the demographic profile of the articles.

Title	Author	Year	Cite score
Sustainable Marketing Performance Of Banks In The Digital Economy: The Role Of Customer Relationship Management (Acheampong et al., 2023)	Acheampong S.; Pimonenko T.; Lyulyov O.	2023	22
Green innovation drives globalization: a longitudinal case study of Angel Yeast's evolution from a start-up to a world-class manufacturer (Liu et al., 2024)	Liu X.; Yu Y.; Song G.; Fu X.	2024	0
Development of Marketing Tools to Raise Funds for Green Projects. Experience of the Republic of Kazakhstan (Científico et al., n.d.)	Bokayev Z.; Kaishatayeva A.; Dzhulamanov T.; Aisin M.; Maukenova A.	2023	5
Collaborative Driving Mode of Sustainable Marketing and Supply Chain Management Supported by Metaverse Technology (7794-73-17347-1-10-20230608, n.d.)	Zhong Z.Z.; Zhao E.Y.	2024	23
Scenario forecasting of consumption of main organic livestock products in Ukraine (Bilous et al., 2021)	Bilous S.; Kyryliuk Y.; Kyryliuk I.; Proshchalykina A.; Stachowiak Z.	2021	2
Integrating Sustainable Development Into Their Marketing Strategy: Practices Of Lebanese Agri-Food Industries (Davidavičienė et al., 2024)	Davidavičienė V.; Abou Fayad C.; Gergess M.	2024	0

Drivers and outcomes of sustainable marketing strategy in the African context: the role of competitive advantage and strategic proactivity as mediating and moderating variables(Demessie & Shukla, 2024)	Demessie G.T.; Shukla A.	2024	1
A digitally enabled circular economy for mitigating food waste: Understanding innovative marketing strategies in the context of an emerging economy(de Souza et al., 2021)	de Souza M.; Pereira G.M.; Lopes de Sousa Jabbour A.B.; et al.	2021	61
Categorizing the barriers in adopting sustainable supply chain initiatives: A way-forward towards business excellence(Nazam et al., 2020)	Nazam M.; Hashim M.; et al. Pahala Y.; Widodo S.;l.	2020	18
The effects of service operation engineering and green marketing on consumer buying interest(Pahala et al., 2021a)	Pahala Y.; Widodo S.;et al.	2021	31

RQ 2: What are the primary business challenges to adopting sustainable marketing practices within the digital age?

With the advent of the digital era, companies are presented with several challenges while implementing sustainable marketing practices. Companies have to strike a balance between profitability and investments in long-term sustainability, frequently against short-run financial pressures and resource limitations (Pahala et al., 2021;Huang et al., 2024)Knowledge gaps also add to the problem, as most companies—particularly in developing nations such as Lebanon, do not have an overarching picture of sustainable marketing due to weak infrastructure and limited resources (Davidavičienė et al., 2024).Additionally, consumer culture and attitudes may inhibit advancement when there is limited awareness or lack of confidence in sustainability declarations(Davidavičienė et al., 2024; Pahala et al., 2021b)

Technical constraints present a further challenge; accelerated innovations require ongoing adjustments to digital marketing tactics and investments in sophisticated tools such as AI and blockchain, which are difficult for many organisations to afford or customise to suit their requirements (de Souza et al., 2021; Pahala et al., 2021a). Conventional business models, not initially built to include sustainable practices, need radical and capital-intensive changes in operations and supply chain management, usually encountering internal opposition and misalignment among stakeholders (Davidavičienė et al., 2024; Pahala et al., 2021b). Moreover, a short-term priority for short-term marketing efforts may constrain investment in longer-term sustainable activities (Huang et al., 2024).

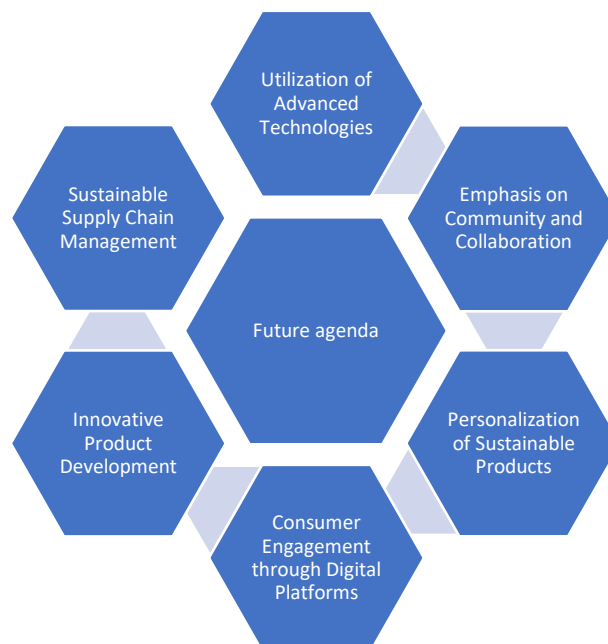
In the financial industry, challenges include bringing together disparate metrics, handling customer information, and adhering to stringent regulations, while global crises such as COVID-19 continue to upset the equilibrium between short-term operational requirements and long-term sustainable efforts (Acheampong et al., 2023). In general, responding to these complex challenges requires a multidisciplinary response, increased cooperation between business and academia, and a strategic emphasis on education, transparency, and technological innovation (Científico et al., n.d.).When implementing sustainable marketing strategies, businesses may encounter the following regulatory and

compliance challenges such as consumer perception and demand, lack of knowledge, cross-departmental coordination, budget restrictions, rapid technological adaptation, and balancing short-term and long-term goals (Demessie & Shukla, 2024).

RQ 3. What are the future trends and directions in sustainable marketing within the digital economy?

Increased environmental awareness, shifting customer preferences, and technological advancements are shaping future sustainable marketing (Bilous et al., 2021). Companies are employing digital technologies such as blockchain, artificial intelligence, and big data analytics to enhance consumer engagement, supply chain openness, and personalisation of advertisements (Demessie & Shukla, 2024). Nevertheless, companies face challenges such as limited resources, complying with legislation, and crafting effective sustainability messaging (Cientifico et al., n.d.). Influencer marketing and social media are crucial in stimulating consumer awareness and demand for sustainable products, and the circular economy is increasingly gaining momentum because it promotes recycling and minimisation of waste (Bilous et al., 2021).

Brands need to communicate their sustainability initiatives and product life cycle well to create consumer loyalty, which also relies on trust and transparency (Demessie & Shukla, 2024). A key strategy to enhance the sustainability activities and promote responsible consumption is collaboration among corporations, non-profits, and the government (Nazam et al., 2020). A systematic approach needs to align sustainability objectives with business operations, since the embedding of green marketing tactics in procurement, production, and marketing processes remains a challenge (Cientifico et al., n.d.).



Source: Articles

Subsequent research might look at how digital transformation enhances customer engagement, supply chain sustainability, and decision-making based on data to maximize marketing strategies (Nazam et al., 2020). In addition, studying how regulatory compliance impacts market positioning and brand reputation will provide valuable information on how corporate strategies can be aligned with sustainable goals (Nazam et al., 2020)

CONCLUSION

In general, the incorporation of digital technologies into sustainable marketing practices is critical for many industries, ranging from banking and retail to agriculture and supply chain management. Through the use of digital technologies like artificial intelligence, blockchain, IoT, and data analytics, companies can improve efficiency in operations, minimize wastage, and encourage environmentally friendly consumption patterns. These technologies not only promote sustainability but also make companies competitive within a more environmentally aware global economy

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