



Study Of Artificial Intelligence in Promoting Green Marketing and Sustainable Consumer Behavior in Financial Services in Coimbatore

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Abstract. Artificial Intelligence (AI) in promoting green marketing practices and encouraging sustainable consumer behavior in the financial services sector. The research focuses on how AI-driven technologies such as data analytics, machine learning, and digital platforms influence eco-friendly financial decisions among consumers in Coimbatore. The study examines customer awareness, adoption levels, and satisfaction with AI-enabled green financial services such as paperless banking, digital payments, and sustainable investment options. Both primary and secondary data were used to analyze the impact of AI on consumer behavior. The findings highlight that AI significantly contributes to reducing environmental impact and enhances sustainable financial practices. The study provides recommendations for improving AI-driven green marketing strategies in financial institutions.

Keywords: Artificial Intelligence, Green Marketing, Sustainable Consumer Behavior, Financial Services, Digital Banking.

I. Introduction

Artificial Intelligence (AI) has transformed the financial services sector by enabling automation, personalization, and data-driven decision-making. In recent years, financial institutions have increasingly adopted AI to promote green marketing and sustainability initiatives. Green marketing refers to the promotion of environmentally friendly products and services, while sustainable consumer behavior involves making choices that minimize environmental impact. In Coimbatore, financial institutions are leveraging AI technologies to encourage digital banking, reduce paper usage, and promote eco-friendly financial products. AI-driven tools such as chatbots, predictive analytics, and personalized recommendations help customers make informed and sustainable financial decisions. These innovations not only improve operational efficiency but also contribute to environmental sustainability. Green financial products and AI-based services that support eco-friendly practices. Additionally, challenges such as data privacy concerns, lack of digital literacy, and resistance to change affect the adoption of AI-driven green initiatives. This study aims to analyze the effectiveness of AI in promoting green marketing and sustainable consumer behavior and identify the challenges faced by consumers in adopting these technologies.

Objectives:

- To analyze the role of AI in promoting green marketing in financial services.
- To study consumer awareness of AI-based sustainable financial services.
- To examine consumer behavior towards eco-friendly financial practices.
- To identify challenges faced by consumers in adopting AI-driven services.



- To suggest measures for improving sustainable financial practices.

Scope Of The Study:

The study focuses on financial institutions and consumers in Coimbatore. It examines AI applications such as digital banking, paperless transactions, and sustainable investment platforms. The research covers customer perception, awareness, and satisfaction related to green financial services. The scope includes both public and private sector banks, fintech companies, and digital payment platforms. The findings aim to provide insights for improving AI-based green marketing strategies.

Need For The Study

The increasing environmental challenges such as climate change, pollution, and resource depletion have made sustainability a priority for all industries. The financial sector plays a crucial role in promoting sustainable practices by influencing investment decisions and consumer behavior. AI has the potential to accelerate green marketing efforts by providing personalized and efficient solutions. Therefore, this study is essential to understand how AI can be leveraged to promote sustainable consumer behavior in financial services.

II. Research Methodology Type Of Research

The study is descriptive in nature, aiming to describe the characteristics of consumers and their behavior towards AI-driven green financial services..

Sources Of Data:

PRIMARY DATA:Collected through structured questionnaires and direct interaction with consumers using financial services

SECONDARY DATA:Collected from journals, websites, books, and reports related to AI and green marketing.

Area Of The Study

The study was conducted in and around Coimbatore city.

Sample Size

A sample of 100 respondents was selected using a convenience sampling method.

Tool For Analysis

- Percentage analysis

III. Review of Literature

SOWMYA & PARASAKTHI (2025) in their study “Artificial Intelligence in Financial Services and Customer Engagement” explained that Artificial Intelligence (AI) plays a vital role in improving customer interaction by offering personalized financial solutions. The study highlights that AI-driven tools such as chatbots and predictive analytics enhance customer satisfaction while promoting eco-friendly digital transactions by reducing paper usage



KARTHIC & MAYILSAMY (2024) in their study “Green Marketing Practices in Banking Sector” analyzed how financial institutions adopt green marketing strategies. The objectives include identifying eco-friendly initiatives and evaluating customer awareness. The study found that digital banking services significantly reduce environmental impact and encourage sustainable consumer behavior in urban areas like Coimbatore.

KARTHIKEYAN (2022) in the study “Impact of Digital Banking on Sustainable Practices” observed that financial institutions adopting AI technologies contribute to sustainability by minimizing physical infrastructure and paperwork. The study concluded that customers increasingly prefer eco-friendly banking services due to awareness of environmental issues

Overview Of Ai In Financial Services:

AI in financial services includes technologies such as machine learning, chatbots, robotic process automation, and predictive analytics. These technologies help financial institutions:

- Reduce paper-based processes through digital documentation
- Promote online and mobile banking
- Offer eco-friendly investment options
- Provide personalized financial advice

AI also enables real-time monitoring of transactions, fraud detection, and improved customer service, contributing to both efficiency and sustainability.

IV. Percentage Analysis

SAMPLE SIZE

Demographic Variables	Frequency	Percentage
Age Below 25 years	18	36%
26-35 years	20	40%
36-45 years	8	16%
46 and above	4	8%
Total	100	100%
Gender Male	28	56%
Female	22	44%
Total	100	100%
Educational Qualification	25	50%
UG	18	36%
PG	7	14%

Interpretation

- Majority of respondents (44%) belong to the 26–35 age group.
- Male respondents (56%) are slightly higher than female respondents.
- Most respondents are postgraduates (48%), indicating awareness of digital technologies.



- A large proportion falls in the middle-income category.

Role Of Ai In Green Marketing

1. **Paperless Banking** - AI supports paperless banking by enabling digital documentation, e-signatures, and automated record management. This reduces the need for physical paperwork, saving trees and minimizing waste. By replacing traditional paper-based processes with digital alternatives, banks can significantly contribute to environmental conservation.
2. **Digital Transactions** - AI-driven systems promote digital payments such as mobile banking, UPI, and online transfers. These reduce the reliance on physical cash, receipts, and transportation, thereby lowering carbon emissions and resource usage. Digital transactions are faster, safer, and more eco-friendly.
3. **Energy Efficiency** - AI helps banks optimize energy consumption by analyzing usage patterns and automating systems like lighting, cooling, and data centers. Smart energy management reduces electricity waste and operational costs, making banking operations more sustainable and environmentally friendly.
4. **Sustainable Investments** - AI tools analyze market data and recommend environmentally responsible investment options, such as green bonds and eco-friendly companies. This encourages customers to invest in sustainable projects, supporting long-term environmental goals and responsible economic growth.
5. **Customer Awareness** - AI-powered chatbots and personalized recommendations educate customers about sustainable practices. Banks can use AI to promote green products, share tips on reducing carbon footprints, and encourage eco-friendly financial decisions, increasing awareness and participation

OTHER OBJECTIVES

- To evaluate the effectiveness of AI tools in reducing environmental impact
- To assess the level of trust in AI-based financial solutions
- To analyze the cost-benefit aspects of adopting AI in green marketing
- To investigate the influence of demographic factors on adoption of AI-driven green services
- To examine the role of AI in promoting transparency and accountability in green initiatives
- To explore the integration of AI with emerging technologies for sustainability

Limitations Of The Study

- Limited sample size
- Restricted to Coimbatore city
- Time constraints

Suggestions

- Financial institutions should increase awareness about AI-driven green services.
- Promote paperless banking and digital transactions.
- Provide training programs to improve digital literacy.
- Enhance data security to build customer trust.
- Introduce incentives for sustainable financial behavior.



V. Conclusion

The study concludes that Artificial Intelligence plays a crucial role in promoting green marketing and sustainable consumer behavior in financial services. AI enables digital transformation, reduces environmental impact, and enhances customer experience. While awareness is growing, there is still a need for improved education and trust-building measures. With proper implementation, AI can significantly contribute to sustainable development in the financial sector, especially in emerging urban centers like Coimbatore

References

- Journals on Artificial Intelligence in Banking
- Research papers on Green Marketing