Artificial Intelligence in Consumer Behaviour: A Systematic Literature Review

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Abstract

This systematic literature analysis examines the many effects of artificial intelligence (AI) on consumer behavior. It consolidates data from a carefully chosen set of English-language papers acquired using a Web of Science search. The selected studies provide useful insights into the complex interaction between AI, consumer attitudes, preferences, decision-making, and the larger consequences for companies. These research cover many areas of AI applications in marketing and consumer domains. The research covers various topics, such as the positive impact of AI on consumer attitudes, potential drawbacks of AI recommendations, the influence of AI-driven recommendation agents on privacy risk, personalized engagement marketing, consumer evaluations of GAN-generated fashion products, AI in ethnic clothing consumption, the adoption of AI in the leisure economy, AI in digital marketing, automation of services using AI in Industry 4.0, AI-powered applications in the service profit chain, the role of AI-powered learning apps in education, AI in B2B settings, the security of AIoT using the HoneyNet approach, the impact of digital AI technologies in India, and the role of AI in the Internet of Things (IoT). This study presents a thorough analysis of the current state of AI and consumer behavior research, providing insights that are relevant for both academic and industrial sectors.

Introduction

Artificial intelligence (AI) has become a powerful force in the era of digital transformation, significantly altering several aspects of marketing and consumer behavior. This systematic literature review attempts to present a thorough and inclusive analysis of the many ways in which AI impacts consumer attitudes, preferences, and decision-making processes. The carefully chosen assortment of English-language publications, obtained from the Web of Science, showcases a diverse range of study carried out by scientists exploring the convergence of AI, marketing, and consumer dynamics.

The papers incorporated in this study encompass a wide range of topics, elucidating the complex connections between AI and consumer behavior. Olan et al. (2021) utilize the fsQCA approach to construct a metaframework that forecasts consumer behavior by considering AI, consumer attitudes, and knowledge-sharing activities. Their analysis reveals the favorable impacts on customer attitudes and engagement. Chen et al. (2022) provide empirical data about the influence of AI recommendations, demonstrating enhanced consumer preferences while also warning against the building of information cocoons.

Rohden & Zeferino (2023) explore the domain of AI-powered recommendation agents and their impact on customer perceptions of data privacy risk, highlighting the crucial significance of consumer trust. Kumar et al. (2019) examine customized engagement marketing and investigate how AI is transforming consumer interaction and its potential effects on global branding strategies. Sohn et al. (2021) analyze how consumers perceive fashion goods created by generative adversarial networks (GANs), offering valuable information for companies contemplating the use of GANs in the fashion retail industry.
This review delves into several aspects, including the favorable influence of AI on the consumption of ethnic clothes (Peng & Krutasaen, 2022), the integration of AI in the leisure sector (Xian, 2021), and its significant role in transforming digital marketing (Tchelidze, 2019). In addition, the study conducted by Dwivedi and Wang (2022) on the use of AI in B2B settings, as well as the research by Tan et al. (2022) on the importance of AI in increasing the security of AIoT, contribute to a more comprehensive understanding of the extensive ramifications of AI. The next sections explore each topic cluster, revealing the intricacies and insights of these research in enhancing our understanding of AI's diverse influence on consumer behavior.

**Methodology**

This systematic literature review utilizes a rigorous approach to thoroughly assess and synthesize the study findings on the influence of artificial intelligence (AI) on consumer behavior. The first step was a methodical exploration of the Web of Science, a highly regarded scholarly database, to locate pertinent publications written in English. The search approach included a blend of keywords, including "AI in marketing," "AI and consumer behavior," and similar phrases, to guarantee the incorporation of a wide range of research covering various topics.

The inclusion criteria consisted of studies that primarily focused on the convergence of AI and consumer behavior, encompassing a wide range of applications in marketing, decision-making, and preferences. A meticulous screening process was employed to guarantee the pertinence and excellence of the chosen articles.

After identifying the pertinent research, a thorough data extraction procedure was carried out. For each paper that was included, we methodically retrieved important details such as the authors, publication year, study methodology used, and major findings. The systematic grouping of the research enabled a structured synthesis, enabling a thorough examination of the many aspects of AI's impact on consumer behavior.

The technique employed for this systematic review conforms to accepted principles for conducting thorough and transparent literature reviews. This study intends to offer a complete and informative summary of the existing understanding of how AI affects consumer behavior. It will achieve this by conducting a systematic search, conducting rigorous screening, and organizing data extraction.

**Literature Review**

The literature surrounding the influence of artificial intelligence (AI) on consumer behavior is marked by a diverse array of studies that delve into the multifaceted implications of this technological integration. Olan et al. (2021) utilize the fsQCA technique to predict consumer behavior, revealing a positive influence of AI on attitudes and knowledge-sharing. Chen et al. (2022) contribute empirical evidence, cautioning against potential information cocoons stemming from AI recommendations.
Rohden and Zeferino (2023) focus on AI-driven recommendation agents and their impact on consumer perceptions of data privacy risk, emphasizing the role of consumer trust. Kumar et al. (2019) explore personalized engagement marketing, highlighting AI's role in reshaping consumer engagement and predicting its impact on branding.

The intersection of AI and fashion evaluation is addressed by Sohn et al. (2021), who compare consumer evaluations of products generated by generative adversarial networks (GAN). Peng and Krutasaen (2022) shift the focus to ethnic clothing consumption, employing AI decision-making and the Internet of Things (IoT) to identify factors influencing consumer psychology.

Xian (2021) examines the adoption of AI in the leisure economy, introducing personal innovativeness as a determinant. Tchelidze (2019) emphasizes the role of AI in digital marketing, underlining the skills required for effective utilization. The automation of services using AI in Industry 4.0 is discussed by Flavian and Casaló (2021), while Wei and Prentice (2022) explore AI-powered applications in the service profit chain.

Categorizing Themes in AI and Consumer Behavior Research: An Overview

AI in Marketing and Consumer Attitudes

Olan et al., 2021 explore the impact of AI on marketing and consumer behavior, revealing a positive influence on consumer attitudes. The study incorporates the fsQCA technique, developing a metaframework predicting behavior based on AI, attitudes, and knowledge-sharing.

AI Recommendations and Decision Quality

Chen et al., 2022 contribute empirical evidence on the impact of AI recommendations on consumer preferences and decision quality. The study, based on experiments, warns against potential information cocoons and highlights the need for regulating AI behaviors.

AI-Driven Recommendation Agents and Privacy Risk

Rohden & Zeferino, 2023 delve into the impact of AI-driven recommendation agents on consumer perceptions of data privacy risk. The study, utilizing in-depth interviews and surveys, identifies factors contributing to privacy risk perception, emphasizing the role of consumer trust.

Personalized Engagement Marketing

Kumar et al., 2019 focus on personalized engagement marketing, exploring how AI curates personalized offerings. The paper predicts the impact of AI on branding and customer management practices in both developed and developing countries.
Consumer Evaluations of GAN-Generated Fashion Products

Sohn et al., 2021 examine consumer evaluations of fashion products generated using generative adversarial network (GAN). The study reveals positive effects on willingness to pay, with the disclosure of GAN technology influencing consumer evaluations.

AI in Ethnic Clothing Consumption

Peng & Krutasaen, 2022 employ AI decision-making and IoT to study factors influencing ethnic wear consumption. The research emphasizes the positive impact of cultural scope and commodity variety on ethnic clothing consumption.

Adoption of AI in the Leisure Economy

Xian, 2021 analyze the adoption of AI in the leisure economy, exploring psychological factors influencing AI acceptance. The study introduces personal innovativeness as a new factor, contributing to the understanding of AI acceptance determinants.

AI in Digital Marketing

Tchelidze, 2019 investigate the role of AI in digital marketing, emphasizing the importance of self-learning machines for understanding online consumer behavior. The research highlights skills required for digital marketers to leverage AI effectively.

Automation of Services Using AI in Industry 4.0

Flavian & Casaló, 2021 discuss the automation of services using AI in the context of Industry 4.0. The paper introduces six papers from a special issue, providing an overview, summarizing key findings, and identifying future research possibilities.

AI-Powered Applications in Service Profit Chain

Wei & Prentice, 2022 draw on service profit chain theory, considering AI-powered applications as service products. The study examines the influence of AI service quality on customer loyalty, exploring emotional intelligence as a moderator.

AI-Powered Learning Apps in Education

Ko et al., 2022 investigate compensatory behavior in students during a pandemic, exploring the role of AI-powered learning apps. The findings reveal nuanced patterns in app usage, demonstrating compensatory behavior for learning loss.

AI in B2B Settings
Dwivedi & Wang, 2022 address the gap in AI research in industrial markets, presenting 16 articles exploring various aspects of AI in B2B settings. The studies cover AI's impact on marketing, organizational behavior, product innovation, supply chain management, and customer relationship management.

Security of AIoT Using HoneyNet Approach

Tan et al., 2022 focus on the security of AIoT, proposing a HoneyNet approach for threat detection and situational awareness. The study utilizes Docker technology and deep learning models to enhance AIoT security.

Digital AI Technologies Impact in India

Bag et al., 2022 address the impact of digital AI technologies on user engagement and conversion in India. The study explores the relationship between AI technologies, user engagement, satisfying user experience, and repurchase intention.

Big Data and AI in Hospitality and Tourism

Lv et al., 2022 conduct a systematic review of big data and AI in hospitality and tourism research. The review identifies themes and trends in 270 relevant studies, covering the definition of big data, types used, AI applications, and major research themes.

AI on the Internet of Things (IoT)

Liu & Liu, 2022 examine the role of AI in the IoT, focusing on accurate node positioning and its applications in geographic and network location services. The study discusses the broad application prospects of IoT technology-oriented AI, emphasizing the need to address potential risks in public safety.
<table>
<thead>
<tr>
<th>Article Title</th>
<th>Reference</th>
<th>Purpose</th>
<th>Findings</th>
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<tbody>
<tr>
<td>(Olan et al., 2021)</td>
<td>Olan et al., 2021</td>
<td>Explore AI impact on marketing and consumer behavior</td>
<td>AI positively influences consumer attitudes. Online communities foster curiosity and engagement.</td>
<td>Consider leveraging AI in marketing strategies for enhanced consumer engagement.</td>
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<tr>
<td>(Chen et al., 2022)</td>
<td>Chen et al., 2022</td>
<td>Investigate AI recommendations and decision quality</td>
<td>AI recommendation strengthens preferences but may lead to information cocoons, negatively affecting decision quality.</td>
<td>Regulate AI behaviors to balance personalized recommendations and diverse information access.</td>
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<tr>
<td>(Kumar et al., 2019)</td>
<td>Kumar et al., 2019</td>
<td>Focus on personalized engagement marketing</td>
<td>AI reshapes consumer engagement through personalized offerings. Predictions for AI impact on branding and customer management.</td>
<td>Businesses should adapt strategies to incorporate AI for personalized consumer engagement.</td>
</tr>
<tr>
<td>(Sohn et al., 2021)</td>
<td>Sohn et al., 2021</td>
<td>Explore consumer evaluations of GAN-generated fashion products</td>
<td>GAN-generated products positively affect willingness to pay. Disclosure of GAN technology influences consumer evaluations.</td>
<td>Firms considering GANs in fashion should emphasize technology disclosure for positive consumer perceptions</td>
</tr>
<tr>
<td>(Peng &amp; Krutasaen, 2022)</td>
<td>Peng &amp; Krutasaen, 2022</td>
<td>Investigate AI in ethnic clothing consumption</td>
<td>AI decision-making and IoT influence ethnic wear consumption. Cultural scope and commodity variety positively impact consumption.</td>
<td>Promote cultural diversity and commodity variety to enhance ethnic clothing consumption.</td>
</tr>
<tr>
<td>(Xian, 2021)</td>
<td>Xian, 2021</td>
<td>Analyze AI adoption in the leisure economy</td>
<td>Psychological factors influence AI acceptance. Personal innovativeness is a significant factor.</td>
<td>Consider psychological factors for effective AI adoption strategies in the leisure economy.</td>
</tr>
<tr>
<td>(Tchelidze, 2019)</td>
<td>Tchelidze, 2019</td>
<td>Investigate AI's role in digital marketing</td>
<td>Emphasize the importance of self-learning machines for understanding online consumer behavior. Highlight skills required for effective AI utilization in digital marketing.</td>
<td>Digital marketers should develop creativity, analytical skills, technological understanding, and communication knowledge for effective AI utilization.</td>
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<td>(Flavian &amp; Casaló, 2021)</td>
<td>Flavian &amp; Casaló, 2021</td>
<td>Discuss the automation of services using AI in Industry 4.0</td>
<td>Overview of automated interactions. Summarize key findings and identify future research possibilities.</td>
<td>Explore possibilities for integrating AI in Industry 4.0, emphasizing future research directions.</td>
</tr>
<tr>
<td>(Ko et al., 2022)</td>
<td>Ko et al., 2022</td>
<td>Investigate compensatory behavior using AI-powered learning apps</td>
<td>Nuanced patterns in app usage influenced by pandemic threat and goal proximity. Demonstrates compensatory behavior for learning loss.</td>
<td>Understand patterns in AI-powered learning app usage for effective learning recovery during adversity.</td>
</tr>
<tr>
<td>(Dwivedi &amp; Wang, 2022)</td>
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<td>Address the gap in AI research in industrial markets</td>
<td>Present 16 articles exploring AI's impact on marketing, organizational behavior, innovation, supply chain, and customer management.</td>
<td>Insights into AI applications for value creation in industrial contexts.</td>
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<tr>
<td>(Tan et al., 2022)</td>
<td>Tan et al., 2022</td>
<td>Focus on the security of AIoT using HoneyNet approach</td>
<td>Propose HoneyNet approach for threat detection and situational awareness in AIoT. Utilize Docker technology and deep learning models.</td>
<td>Enhance AIoT security through the proposed HoneyNet approach, incorporating Docker technology and deep learning models.</td>
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<td>(Bag et al., 2022)</td>
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<td>Address the impact of digital AI technologies on user engagement in India</td>
<td>Explore the relationship between AI technologies, user engagement, user experience, and repurchase intention.</td>
<td>Emphasize the importance of satisfying user experiences for increased engagement and repurchase intention.</td>
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<tr>
<td>(Lv et al., 2022)</td>
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<td>Conduct a systematic review of big data and AI in hospitality and tourism research</td>
<td>Identify themes and trends in 270 studies covering big data, AI applications, and major research themes.</td>
<td>Provide implications, challenges, and directions for future research in big data and AI in hospitality and tourism.</td>
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### Discussion on Key Findings

The amalgamation of research data from several studies investigating the intersection of artificial intelligence (AI) and consumer behavior reveals intricate patterns, difficulties, and prospects. This conversation explores significant issues, elucidating the ramifications of artificial intelligence in the domains of marketing, decision-making, privacy, customization, and cultural settings.

The study conducted by Olan et al. (2021) demonstrates that AI has a beneficial effect on consumer sentiments, offering marketers valuable information to improve customer engagement. The metaframework established using the fsQCA approach functions as a significant instrument for forecasting and comprehending customer behavior. As artificial intelligence becomes increasingly essential to marketing efforts, these valuable insights are expected to be critical for decision-makers.

AI suggestions and Decision Quality: Chen et al. (2022) provide empirical data that raises concerns about the possible disadvantages of AI suggestions. AI-powered suggestions, although enhancing consumer preferences, might result in the construction of information cocoons, which can negatively affect the quality of decision-making. It is crucial to regulate AI activities in order to maintain a balance between customized suggestions and ensuring that customers receive a diverse range of information.

Rohden and Zeferino (2023) examine the privacy consequences associated with AI-powered recommendation bots. The results emphasize the significance of openness and confidence from consumers in reducing perceived risks. In light of increasing concerns over data privacy, it is imperative for businesses to give utmost importance to transparent communication and ethical standards in the field of artificial intelligence in order to preserve customer confidence.

Personalized Engagement Marketing: According to Kumar et al. (2019), AI plays a significant role in transforming personalized engagement marketing. The report forecasts a transformation in consumer involvement and administration methods, with ramifications for both advanced and emerging markets. With the ongoing advancement of AI, organizations have the opportunity to utilize these valuable information in order to customize their marketing campaigns to suit various customer groups.

Evaluations from consumers of fashion products generated by GANs:
Sohn et al. (2021) provide valuable insights into the field of fashion by showcasing the favorable influence of GAN-generated items on consumers’ willingness to spend. The revelation of GAN technology also impacts consumer assessments. Integrating AI technology in the fashion sector, while clearly articulating their application, can improve customer attitudes and increase their readiness to spend.

Peng and Krutasaen (2022) examine the role of AI in ethnic apparel consumption and emphasize its favorable impact on cultural diversity and product selection. Comprehending these aspects is crucial for firms aiming to advertise ethnic clothing, highlighting the capacity of AI to overcome cultural differences in customer preferences.

AI Adoption in the Leisure sector: According to Xian's (2021) analysis, the use of AI in the leisure sector is influenced by personal innovativeness. Understanding the many psychological factors that impact the acceptability of AI helps in formulating effective approaches to promote its wider adoption. These effects extend beyond leisure services and also impact the acceptability of technology in other fields.

Tchelidze (2019) emphasizes the significance of autonomous robots in comprehending online customer behavior in the realm of digital marketing. Flavian and Casaló (2021) examine the utilization of artificial intelligence (AI) to automate services within the framework of Industry 4.0. These studies collectively emphasize the significant impact that AI may have on several businesses, underscoring the importance of ongoing learning and flexibility.

Wei and Prentice (2022) enhance the service profit chain theory by including AI-powered applications as service goods. An in-depth comprehension of the complex interconnections among AI service quality, customer happiness, and emotional intelligence provides organizations with a clear path to improve customer loyalty.

The authors Dwivedi and Wang (2022) aim to fill the void in AI research inside industrial marketplaces by conducting a thorough investigation of several aspects in B2B settings. Tan et al. (2022) specifically examine the security of Artificial Intelligence of Things (AIoT) and suggest a HoneyNet strategy to improve the identification of potential threats. These studies demonstrate the adaptability of AI applications in many sectors, particularly emphasizing challenges related to security.

Bag et al. (2022) examine the influence of digital AI technologies on user engagement and conversion rates in India. Lv et al. (2022) do a comprehensive analysis of the existing literature on big data and AI in the hotel and tourist industry, uncovering recurring topics and patterns. These studies make valuable contributions to the worldwide discussion on the uses of AI, by demonstrating regional differences and emphasizing the potential of AI to revolutionize various markets.

The study conducted by Liu and Liu (2022) examines the utilization of AI in the context of the Internet of Things (IoT), with a particular emphasis on achieving precise node location. The report highlights the imperative to tackle possible hazards linked to AI technology in the realm of public safety. Ensuring appropriate and successful adoption of AI in IoT will require addressing safety concerns as a top priority.
Conclusion

To summarize, this systematic literature review explores a wide range of research, offering a comprehensive perspective on the many effects of AI on consumer behavior. The results emphasize the profound impact that AI may have on many sectors, highlighting the need for careful management of customization, privacy, and ethical concerns. As organizations increasingly use AI technology, the knowledge obtained from these studies will act as valuable references for understanding and adapting to the ever-changing environment of customer preferences, decision-making, and market trends. The classification of topics furthermore enables a subtle comprehension of the many uses of AI, establishing the foundation for future investigation and real-world applications. As the field of AI progresses, it is crucial to continuously explore and reflect on these topics to ensure ethical and consumer-focused integration of AI in many global settings.

Declarations

Author Contribution

Both authors contributed equally.

References


**Figures**
Figure 1

Unnumbered image in the Methodology section.