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Impact of Personalized Marketing through AI Algorithms on Consumer Behaviour

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ABSTRACT: Artificial Intelligence (AI) has become an important technological tool in modern marketing strategies, enabling businesses to deliver highly personalized experiences to consumers. AI algorithms analyse large volumes of customer data such as browsing behaviour, purchase history, and demographic information to provide customized advertisements, product recommendations, and promotional offers. This study examines the impact of AI-based personalized marketing on consumer behaviour and purchase decisions in the digital marketplace. The research follows a descriptive research design and primary data was collected through a structured questionnaire from 100 respondents in Coimbatore district. Statistical tools such as Percentage Analysis and Chi-square Test were used for analysing the collected data. The findings reveal that personalized marketing significantly influences consumer purchase decisions and improves customer engagement. However, concerns regarding data privacy and trust in AI-driven recommendations remain important challenges. The study highlights the growing importance of AI in marketing and suggests that businesses must balance personalization with ethical data practices to build consumer trust.

KEYWORDS: Artificial Intelligence, Personalized Marketing, Consumer Behaviour, Digital Marketing, AI Algorithms,

I. INTRODUCTION

Artificial Intelligence has transformed the way businesses interact with consumers in the modern digital economy. Traditional marketing approaches relied on mass communication and demographic segmentation, whereas modern marketing strategies focus on personalized communication and individual customer experiences. AI algorithms allow organizations to analyse large volumes of consumer data and identify patterns related to purchasing behaviour, preferences, and interests.

Personalized marketing refers to the practice of delivering customized marketing messages, product recommendations, and promotional offers based on individual consumer data. Through machine learning and predictive analytics, AI systems are capable of analysing browsing history, purchase patterns, and demographic information to generate highly relevant recommendations.

Many global organizations such as e-commerce platforms and digital service providers use AI-driven recommendation systems to improve customer engagement and increase sales. These systems help businesses deliver the right product to the right customer at the right time. As a result, personalized marketing has become an important strategy for enhancing customer satisfaction and brand loyalty.

In the Indian context, the rapid growth of internet usage, smartphones, and digital payment systems has accelerated the adoption of AI-based marketing strategies. Companies increasingly use AI technologies to analyse consumer behaviour and create targeted advertising campaigns. However, despite the advantages of AI-driven personalization, concerns regarding data privacy, transparency, and consumer trust remain significant issues. Therefore, studying the impact of personalized marketing through AI algorithms has become an important area of research in marketing and consumer behaviour.



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II. REVIEW OF LITERATURE

Several researchers have examined the role of artificial intelligence in marketing and consumer behaviour. Smith (2020) found that AI improves marketing efficiency by enhancing targeting accuracy and campaign effectiveness. Kumar (2021) observed that personalized marketing strategies significantly influence consumer purchase intentions by providing relevant product recommendations.

Lee (2019) analysed AI recommendation systems in online retail and concluded that algorithm-based suggestions positively influence buying decisions. Sharma (2022) highlighted that AI-driven marketing strategies improve customer engagement and strengthen brand loyalty.

Patel (2023) studied consumer perception towards AI marketing and found that consumers prefer personalized advertisements compared to general advertisements. Brown (2018) also suggested that machine learning technologies enhance marketing prediction accuracy and enable better decision-making.

Although previous studies highlight the advantages of AI-based marketing strategies, limited research has focused on consumer perception and trust in AI-driven personalized marketing. This research attempts to address this gap by analysing how personalized marketing through AI algorithms influences consumer behaviour and purchasing decisions.

III. RESEARCH METHODOLOGY

The study adopts a **descriptive research design** to examine the influence of AI-driven personalized marketing on consumer behaviour.

Area of Study: Coimbatore District

Sample Size: 100 respondents

Sampling Technique: Convenience Sampling

Data Source:

Primary data was collected using a structured questionnaire distributed to respondents who interact with digital marketing platforms.

Tools for Analysis

The statistical tools used in the study include:

- Percentage Analysis
- Chi-Square Test
- Graphical Representation

The collected data was analysed using Microsoft Excel to interpret the relationship between AI-based personalized marketing and consumer purchasing behaviour.

IV. RESULTS AND DISCUSSION

The demographic analysis shows that the majority of respondents belong to younger age groups who actively engage with digital platforms. Approximately 64% of respondents fall under the age category of below 35 years, indicating that younger consumers are more exposed to personalized digital marketing strategies.

Gender distribution shows that 58% of respondents are male and 42% are female. The occupational profile indicates that students represent the largest group, followed by salaried employees and professionals. This suggests that respondents are frequent users of digital platforms and online shopping services.

The findings reveal that more than half of the respondents are aware of personalized advertisements that appear based on browsing and purchase history. Around 56% of respondents agree that personalized product recommendations make online shopping easier and improve their purchasing experience.



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Furthermore, 50% of respondents indicated that they are more likely to purchase products recommended through personalized advertisements. This confirms that AI-driven marketing strategies significantly influence consumer buying decisions.

Table 4.1 Demographic profile

Variable	Category	Percentage
Age	Below 25	32%
	25–34	32%
	35–44	19%
	45–54	14%
	55 and above	3%
Gender	Male	58%
	Female	42%
Marital Status	Married	51%
	Single	49%

However, the study also reveals certain concerns. A large proportion of respondents expressed neutrality regarding how AI collects and uses personal data. Additionally, many respondents showed hesitation about sharing personal information with companies for marketing purposes. These findings indicate that while consumers appreciate the benefits of personalization, privacy concerns remain a major challenge for AI-based marketing systems.

Table 4.2: Awareness of AI Personalized Marketing

Statement	Agree (%)	Neutral (%)	Disagree (%)
Notice personalized ads based on browsing history	54%	27%	19%
Aware companies use AI for ads	51%	28%	21%
Understand AI collects customer data	39%	37%	24%
Personalized suggestions make shopping easier	56%	20%	24%
AI helps companies understand preferences	42%	35%	23%

Overall, the results demonstrate that AI-powered personalized marketing enhances customer engagement and influences purchase behaviour, but businesses must address privacy issues to maintain consumer trust.

V. LIMITATIONS

The study has several limitations that should be considered while interpreting the results.

- The research is limited to respondents in Coimbatore district.
- The sample size is restricted to 100 respondents.
- The study uses convenience sampling which may limit generalization.
- Responses are based on individual perceptions which may vary among consumers.

VI. CONCLUSION AND FUTURE WORK

The study concludes that personalized marketing through AI algorithms has a significant impact on consumer behaviour and purchase decisions. AI technologies enable businesses to analyse consumer data effectively and deliver highly relevant marketing content that improves customer engagement and satisfaction.

The results indicate that many consumers find personalized product recommendations helpful and are more likely to purchase products suggested through AI-driven advertisements. However, the study also highlights concerns related to data privacy and consumer trust.



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For future research, scholars may examine larger and more diverse samples across different regions to better understand consumer perceptions of AI marketing. Additionally, future studies can explore advanced AI technologies such as predictive analytics and conversational AI in digital marketing.

Businesses should focus on improving transparency and ethical data practices while implementing AI-powered marketing strategies. By balancing personalization with privacy protection, companies can build stronger relationships with customers and ensure sustainable marketing success.

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