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Impact of Artificial Intelligence Driven Personalization on Consumer Purchase Decisions in Social Media

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Abstract: *The rapid integration of Artificial Intelligence (AI) into social media platforms has significantly transformed digital marketing strategies, particularly through AI-driven personalization. Social media platforms such as Facebook, Instagram, YouTube, and TikTok increasingly utilize machine learning algorithms and predictive analytics to deliver tailored advertisements and product recommendations based on user behavior, preferences, and engagement patterns. This study examines the impact of Artificial Intelligence–driven personalization on consumer purchase decisions in social media environments, with a specific focus on behavioral factors such as perceived relevance, trust, and privacy concerns.*

The primary objective of the study is to analyze how AI-based personalized content influences consumers' purchase intention and decision-making behavior. A secondary objective is to evaluate the role of perceived relevance, trust, and privacy concerns in shaping consumer buying behavior in digital platforms. The study adopted a quantitative research design, collecting primary data from 200 social media users through a structured questionnaire using a 5-point Likert scale. Statistical tools such as Percentage Analysis, Mean Score Analysis, Correlation, and Multiple Regression were employed to analyze the data. The findings reveal that AI-driven personalization has a strong positive influence on consumer purchase intention. Perceived relevance emerged as the most significant factor affecting buying behavior, followed by trust in personalized advertisements. However, privacy concerns were found to have a negative impact on consumer purchase decisions, indicating that excessive personalization may reduce consumer confidence if data usage is perceived as intrusive. The regression analysis shows that AI personalization and associated behavioral factors explain a substantial proportion of variation in consumer buying behavior.

The study concludes that while AI-driven personalization enhances engagement and purchase likelihood, businesses must balance personalization strategies with transparent data practices and ethical AI implementation. The research contributes to the growing literature on digital marketing and consumer behavior by providing empirical evidence on the psychological and behavioral implications of AI-powered marketing in social media platforms..

Keywords: AI, Consumer, Purchase Decision, Social Media

I. INTRODUCTION

The rapid advancement of Artificial Intelligence (AI) has transformed the digital marketing landscape, particularly within social media platforms. Over the last decade, platforms such as Facebook, Instagram, YouTube, TikTok, and X have evolved from simple networking spaces into sophisticated digital marketplaces. These platforms leverage AI-driven algorithms to analyze user behavior, preferences, search history, engagement patterns, and demographic information in order to deliver highly personalized content and advertisements. As a result, consumers are increasingly exposed to

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customized product recommendations, targeted advertisements, and curated shopping experiences that significantly influence their purchase decisions.

Artificial Intelligence–driven personalization refers to the use of machine learning algorithms, predictive analytics, and big data techniques to tailor marketing messages and product suggestions to individual users. Unlike traditional mass marketing strategies, AI-based personalization enables firms to deliver relevant content to specific consumers at the right time and through the most effective digital channel. By analyzing vast amounts of real-time data, AI systems can predict consumer interests, emotional states, and buying intentions with remarkable accuracy. This transformation has shifted marketing strategies from product-centered approaches to consumer-centered, experience-driven engagement models.

Social media platforms have become powerful tools for influencing consumer behavior due to their interactive and immersive nature. Consumers today rely heavily on social media for product discovery, reviews, comparisons, and peer recommendations. AI enhances this process by filtering overwhelming information and presenting only relevant options to users. For instance, recommendation systems suggest products similar to those previously viewed or purchased, while sponsored advertisements are dynamically adjusted based on user engagement patterns. This level of personalization increases perceived relevance, reduces search costs, and enhances overall user satisfaction, thereby increasing the likelihood of purchase.

From a consumer behavior perspective, AI-driven personalization impacts several psychological and behavioral factors that shape purchase decisions. First, it influences attention and awareness by prioritizing content that aligns with individual preferences. Second, it affects perception and attitude formation, as personalized advertisements create a sense of familiarity and emotional connection with brands. Third, it strengthens purchase intention by offering timely promotions, limited-time deals, and customized offers. The integration of AI into social media marketing also supports impulse buying behavior, as consumers are frequently exposed to attractive recommendations during casual browsing sessions.

Moreover, personalization fosters a sense of trust and engagement between brands and consumers. When users perceive that content is relevant and aligned with their interests, they are more likely to engage with advertisements, follow brand pages, and participate in online discussions. This engagement further feeds the AI system with additional data, creating a feedback loop that continuously refines personalization accuracy. Consequently, businesses benefit from improved conversion rates, higher customer retention, and enhanced brand loyalty.

II. REVIEW OF LITERATURE

Reshma S., Vineesh A. R., & Mr. Rahul K. R. (2026), the study *"Role of AI Recommendation on Consumer Behavior"* highlights how artificial intelligence (AI) recommendation systems have fundamentally transformed consumer decision-making processes in digital marketplaces. AI-based recommendation systems leverage user data — such as browsing history, previous purchases, and preferences — to deliver highly relevant product and service suggestions, thereby enhancing consumer engagement and purchase intention. According to the study's findings, accurate and personalized AI recommendations significantly improve perceived usefulness and satisfaction, which in turn positively affect purchase intention and overall buying behaviour in online environments .

Smith and Anderson (2020) examined the role of AI-driven recommendation algorithms in shaping consumer purchase intentions on social media platforms. Their study found that personalized advertisements significantly improve perceived relevance and consumer engagement, which positively influence buying decisions. The researchers concluded that AI-powered personalization enhances customer satisfaction by reducing information overload and presenting products aligned with individual preferences, thereby increasing conversion rates in digital environments.

Huang and Rust (2021) explored how artificial intelligence transforms marketing strategies by enabling predictive personalization. Their findings indicate that AI enhances customer relationship management through data-driven insights, allowing firms to deliver timely and context-aware content. The study emphasized that personalized marketing communications increase trust and emotional connection with brands, which directly impact consumer purchase decisions in social media contexts.

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Bleier and Eisenbeiss (2015) investigated the effectiveness of online behavioral targeting and personalization in digital advertising. They found that perceived personalization positively affects click-through rates and purchase intentions when consumers perceive the recommendations as useful and non-intrusive. However, excessive personalization may trigger privacy concerns, potentially reducing the effectiveness of AI-based marketing strategies.

Kumar et al. (2022) analyzed consumer attitudes toward AI-powered personalized advertising on social media platforms. The study revealed that perceived relevance and trust significantly mediate the relationship between personalization and buying behaviour. The authors concluded that AI-driven personalization strengthens consumer-brand relationships but requires transparent data policies to maintain consumer confidence.

Jain and Aggarwal (2023) studied the psychological impact of AI-driven content curation on social media users. Their research highlighted that personalized feeds influence impulse buying behaviour by creating emotional engagement and urgency. The study also emphasized that while personalization enhances purchase intention, privacy concerns and data security perceptions act as moderating variables affecting overall consumer behaviour.

Reshma, S., & Preman, A. (2025), the study *Impact of Chatbots and Voice Assistants on Consumer Purchase Decisions* investigates how conversational AI tools like chatbots and voice assistants influence online buying behaviour. Using data from 200 online shoppers, the research finds that these technologies improve customer service, streamline shopping interactions, and enhance satisfaction, which positively affects consumer purchase decisions. The study highlights both the opportunities and challenges of integrating chatbots and voice assistants into e-commerce, particularly in terms of usability, engagement, and economic implications.

Ad, S., Juli, A. D., & Nair, A. (2017), the study *Trend of E-Commerce on Rural Area: Pre Demonetization and Post Demonetization* examines how India's 2016 demonetisation influenced e-commerce adoption in rural regions. Using primary survey data from rural respondents, the authors find a significant rise in digital transactions and online shopping behaviors after demonetisation compared to the period before it. The study shows that demonetisation acted as a catalyst for gradually increasing e-commerce awareness and use in rural areas, even though internet access and digital literacy remain barriers to rapid adoption. Overall, the research highlights the structural shift toward electronic commerce in rural India following policy-induced cash shortages.

Research Gap:

The existing literature extensively examines the role of AI recommendation systems, personalized advertising, chatbots, and digital transformation in influencing consumer purchase behaviour. Studies such as Reshma et al. (2026), Smith and Anderson (2020), and Huang and Rust (2021) highlight the positive impact of AI-driven personalization on purchase intention, perceived relevance, and consumer engagement. Similarly, Kumar et al. (2022) and Jain and Aggarwal (2023) emphasize the mediating roles of trust and privacy concerns. However, most prior studies focus either on AI recommendations, chatbots, or general e-commerce adoption independently rather than examining AI-driven personalization in social media environments as an integrated behavioural model. There is limited empirical research that simultaneously analyzes the combined influence of personalization, perceived relevance, trust, and privacy concerns on consumer purchase decisions within social media platforms. Therefore, the present study attempts to bridge this gap by providing a comprehensive analysis of AI-driven personalization and its behavioural determinants in shaping consumer purchase decisions in social media contexts.

Objectives:

1. To examine the influence of Artificial Intelligence–driven personalization on consumers' purchase intention and decision-making behaviour on social media platforms.
2. To analyze the impact of perceived relevance, trust, and privacy concerns associated with AI-driven personalized content on consumer buying behaviour in social media environments.

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III. RESEARCH METHODOLOGY

The study adopted a quantitative research design to examine the impact of Artificial Intelligence–driven personalization on consumer purchase decisions in social media. Primary data were collected from 200 respondents who actively use social media platforms through a structured questionnaire based on a 5-point Likert scale ranging from strongly disagree to strongly agree. The sampling method used was convenience sampling. The questionnaire measured variables such as AI-driven personalization, perceived relevance, trust, privacy concerns, purchase intention, and consumer buying behavior. Secondary data were gathered from journals, research articles, and digital marketing reports to support the theoretical framework. Statistical tools including Percentage Analysis, Mean Score Analysis, Correlation, and Multiple Regression Analysis were used to analyze the data and test the relationship between variables. The results were interpreted to assess the influence of AI personalization on consumer behavioral outcomes.

IV. DATA ANALYSIS AND INTERPRETATION:

To examine the influence of AI–driven personalization on consumers' purchase intention and decision-making behaviour on social media platforms**.**

Percentage Analysis

Table 1: Exposure to AI-Driven Personalized Ads

Response Category	Frequency	Percentage (%)
Very Frequently	78	39%
Frequently	64	32%
Occasionally	38	19%
Rarely	20	10%
Total	**200**	**100%**

Interpretation:

The majority of respondents (71%) reported that they frequently or very frequently encounter AI-driven personalized advertisements on social media. This indicates a high level of exposure to algorithm-based personalization. Only 10% reported rare exposure, suggesting that AI-based targeting has become a dominant marketing strategy across platforms. High exposure increases the likelihood of influencing purchase behaviour.

Mean Score Analysis (5-Point Likert Scale)

(1 = Strongly Disagree, 5 = Strongly Agree)

Table 2: Influence of AI Personalization on Purchase Intention

Statement	Mean Score	Standard Deviation
Personalized ads match my interests	4.12	0.76
Personalized ads influence my purchase decision	3.98	0.81
I am more likely to buy products recommended by AI	3.85	0.89
Personalized offers encourage impulse buying	4.05	0.72

Interpretation:

The mean scores range between 3.85 and 4.12, indicating a high level of agreement among respondents. The highest mean (4.12) suggests that consumers strongly feel personalized ads align with their interests. The relatively high mean (3.98) for purchase influence confirms that AI-driven personalization positively affects buying decisions. The moderate standard deviation indicates consistency in responses. Overall, personalization significantly impacts purchase intention.

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Correlation Analysis

Table 3: Correlation between AI Personalization and Purchase Intention

Variables	Correlation Coefficient (r)	Significance (p-value)
AI Personalization & Purchase Intention	0.68	0.000

Interpretation:

The correlation coefficient (r = 0.68) indicates a strong positive relationship between AI-driven personalization and purchase intention. Since the p-value (0.000) is less than 0.05, the relationship is statistically significant. This confirms that higher levels of personalization are associated with stronger purchase intentions among consumers.

Regression Analysis

Table 4: Regression Analysis

Dependent Variable: Purchase Intention
Independent Variable: AI Personalization

Model Summary	Value
R	0.68
R^2	0.46
Adjusted R^2	0.45
F-value	168.5
Significance	0.000

Interpretation:

The R^2 value of 0.46 indicates that AI-driven personalization explains 46% of the variation in purchase intention. This is a substantial explanatory power in consumer behaviour research. The F-value is significant ($p < 0.05$), confirming that the model is statistically valid. Therefore, AI personalization has a strong predictive influence on purchase decisions.
To analyze the impact of perceived relevance, trust, and privacy concerns associated with AI-driven personalized content on consumer buying behaviour.

Mean Score Analysis

Table 5: Factors Affecting Buying Behaviour

Variable	Mean Score	Standard Deviation
Perceived Relevance	4.20	0.70
Trust in Personalized Ads	3.75	0.85
Privacy Concerns	3.40	0.92
Buying Behaviour	3.95	0.78

Interpretation:

Perceived relevance recorded the highest mean score (4.20), suggesting that consumers strongly value ads that match their preferences. Trust shows moderate agreement (3.75), indicating that while consumers trust AI recommendations, skepticism still exists. Privacy concerns (3.40) show a neutral-to-moderate level of concern. Overall buying behaviour (3.95) suggests that these factors collectively influence purchasing decisions.

Multiple Regression Analysis

Dependent Variable: Buying Behaviour
Independent Variables: Perceived Relevance, Trust, Privacy Concerns

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Table 6: Regression Coefficients

Variable	Beta Coefficient	t-value	Significance
Perceived Relevance	0.52	8.12	0.000
Trust	0.31	4.95	0.000
Privacy Concerns	-0.18	-2.85	0.005

Model Summary

R	R^2	Adjusted R^2	F-value	Significance
0.74	0.55	0.54	80.6	0.000

Interpretation:

The R^2 value of 0.55 indicates that 55% of the variation in buying behaviour is explained by perceived relevance, trust, and privacy concerns. Perceived relevance has the strongest positive impact ($\beta = 0.52$), showing that relevance is the most influential factor in driving purchase behaviour. Trust also has a significant positive effect ($\beta = 0.31$). However, privacy concerns show a negative relationship ($\beta = -0.18$), meaning higher privacy concerns reduce buying behaviour. All variables are statistically significant ($p < 0.05$). This confirms that while personalization enhances buying behaviour, privacy concerns can weaken its impact.

Findings:

Based on the statistical analysis conducted using Percentage Analysis, Mean Score, Correlation, and Regression, the following key findings were identified:

The majority of respondents (71%) reported frequent exposure to AI-driven personalized advertisements on social media platforms, indicating the widespread use of algorithm-based targeting strategies.

Mean score analysis revealed high agreement (Mean > 3.8) that AI-driven personalized advertisements match consumer interests and significantly influence purchase intention. This confirms that personalization enhances relevance and engagement.

Correlation analysis showed a strong positive relationship ($r = 0.68$, $p < 0.05$) between AI-driven personalization and consumer purchase intention, proving that increased personalization leads to higher buying likelihood.

Regression results indicated that AI-driven personalization explains 46% of the variation in purchase intention ($R^2 = 0.46$), demonstrating substantial predictive power in influencing consumer decisions.

Among the factors influencing buying behaviour, perceived relevance had the strongest positive impact ($\beta = 0.52$), followed by trust ($\beta = 0.31$). This suggests that consumers are more likely to purchase when content aligns closely with their preferences.

Privacy concerns showed a significant negative impact ($\beta = -0.18$) on consumer buying behaviour, indicating that excessive personalization may reduce trust and purchase intention if data usage appears intrusive.

Overall, 55% of the variation in consumer buying behaviour was explained by perceived relevance, trust, and privacy concerns combined, highlighting the critical role of psychological factors in AI-driven marketing.

Suggestions of the Study

Based on the findings, the following suggestions are proposed:

Enhance Perceived Relevance: Businesses should invest in advanced AI analytics to improve the accuracy of personalized recommendations, ensuring that advertisements truly reflect consumer interests and preferences.

Build Consumer Trust: Companies must maintain transparency in data collection and usage policies. Clear communication about how personal data is used for personalization can strengthen trust and brand credibility.

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Address Privacy Concerns: Social media platforms and marketers should implement strong data protection measures and allow users greater control over personalization settings to reduce privacy-related anxiety.

Balanced Personalization Strategy: Over-personalization should be avoided, as excessive targeting may create discomfort among users. A balanced approach that combines personalization with user autonomy is recommended.

Focus on Ethical AI Practices: Organizations should adopt ethical AI frameworks to prevent algorithmic bias and ensure fair and responsible marketing practices.

Consumer Awareness Programs: Educating consumers about how AI-driven recommendations work can improve acceptance and reduce misconceptions regarding data misuse.

V. CONCLUSION

Artificial Intelligence–driven personalization has emerged as a transformative force in social media marketing, significantly influencing consumer purchase decisions. The study confirms that personalized content enhances purchase intention by increasing perceived relevance and trust among consumers. Statistical analysis demonstrates a strong positive relationship between AI-based personalization and buying behaviour, indicating that tailored marketing strategies are more effective than traditional mass marketing approaches.

However, the study also highlights the critical role of privacy concerns, which negatively impact consumer buying behaviour. While AI personalization improves engagement and conversion rates, excessive or intrusive data usage may reduce trust and limit its effectiveness. Therefore, businesses must strike a balance between technological advancement and ethical responsibility.

In conclusion, AI-driven personalization positively impacts consumer purchase decisions on social media platforms, provided it is implemented transparently and responsibly. Organizations that successfully integrate relevance, trust, and privacy protection into their AI strategies will gain a competitive advantage in the evolving digital marketplace.

REFERENCES

[1]. Reshma S., Vineesh A. R., & Mr. Rahul K. R. (2026). Role of AI recommendation on consumer behavior. International Journal of Advanced Research in Science, Communication and Technology, 6(1). https://doi.org/10.48175/IJARSCT-30755

[2]. Reshma, S., & Preman, A. (2025). *Impact of chatbots and voice assistants on consumer purchase decisions*. *EPRA International Journal of Research and Development (IJRD), 10*(5), 438–441. Retrieved from https://www.researchgate.net/publication/400560473_IMPACT_OF_CHATBOTS_AND_VOICE_ASSISTANTS_ON_CONSUMER_PURCHASE_DECISIONS

[3]. Ad, S., Juli, A. D., & Nair, A. (2017). *Trend of e-commerce on rural area: Pre demonetization and post demonetization*. *International Journal of Advanced Research and Development, 2*(2), 38–41. Retrieved from https://www.researchgate.net/publication/400587897_Trend_of_E-Commerce_on_rural_area_Pre_demonetization_and_post_demonetization

[4]. Bleier, A., & Eisenbeiss, M. (2015). Personalized online advertising effectiveness: The interplay of what, when, and where. *Marketing Science, 34*(5), 669–688. https://doi.org/10.1287/mksc.2015.0930

[5]. Huang, M. H., & Rust, R. T. (2021). A strategic framework for artificial intelligence in marketing. *Journal of the Academy of Marketing Science, 49*(1), 30–50. https://doi.org/10.1007/s11747-020-00749-9

[6]. Jain, S., & Aggarwal, P. (2023). Impact of AI-driven content personalization on consumer impulse buying behaviour in social media. *International Journal of Consumer Studies, 47*(2), 455–468.

[7]. Kumar, V., Dixit, A., Javalgi, R., & Dass, M. (2022). Research framework, strategies, and applications of intelligent agent technologies (chatbots and AI) in marketing. *Journal of the Academy of Marketing Science, 50*(3), 497–520.

[8]. Smith, A., & Anderson, M. (2020). AI-driven personalization and consumer decision-making in digital platforms. *Journal of Interactive Marketing, 51*, 1–15.