

Impact Of Artificial Intelligence-Driven Personalised Marketing On Consumer Purchase Intention In Indian E-Commerce

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Abstract

The rapid expansion of artificial intelligence (AI) has transformed e-commerce marketing by enabling businesses to deliver personalized recommendations, targeted advertisements, customized promotional offers, and AI-powered customer assistance according to individual consumer preferences and online behaviour. This study examines the impact of AI-driven personalized marketing on consumer purchase intention in the Indian e-commerce sector, with particular emphasis on consumer trust, perceived relevance, perceived value, privacy concerns, and perceived intrusiveness. The study adopts a quantitative research approach and examines consumer perceptions regarding AI-enabled personalization and their intention to purchase products through e-commerce platforms. The analysis employs descriptive statistics, Cronbach's alpha, Pearson correlation, and multiple regression analysis to evaluate the relationships among the study variables. The findings indicate that AI-driven personalized marketing has a significant positive relationship with purchase intention ($r = 0.620$), while perceived relevance demonstrates the strongest positive correlation with purchase intention ($r = 0.640$). Multiple regression results further show that AI-driven personalized marketing, consumer trust, perceived relevance, and perceived value have significant positive effects on purchase intention, whereas privacy concern has a significant negative effect. The overall regression model is statistically significant and explains 47.8% of the variation in consumer purchase intention. The findings suggest that consumers are more likely to respond positively to AI personalization when recommendations are relevant, valuable, trustworthy, and convenient. However, concerns regarding the collection and use of personal information may weaken consumers' willingness to purchase. The study concludes that e-commerce businesses should adopt consumer-centric and transparent AI personalization strategies that balance marketing effectiveness with privacy, trust, and consumer control.

Keywords: Artificial Intelligence (AI); Personalized Marketing; Consumer Purchase Intention; Indian E-Commerce; Consumer Trust; Perceived Relevance; Perceived Value; Privacy Concern; Perceived Intrusiveness; AI-Powered Recommendation Systems; Targeted Advertising; Digital Marketing.

Introduction

The rapid development of digital technologies has fundamentally transformed the way businesses communicate with consumers, understand market needs, and influence purchasing decisions. Among the technologies reshaping contemporary marketing, **Artificial Intelligence (AI)** has emerged as one of the most influential innovations. AI enables firms to collect, process, and interpret large volumes of consumer data and use these insights to deliver highly targeted and individualized marketing experiences. In e-commerce, where consumers interact with digital platforms rather than physical stores, AI has become particularly important because purchasing decisions can be influenced by algorithms that continuously learn from consumers' browsing histories, searches, clicks, previous purchases, preferences, demographic characteristics, and online interactions. Consequently, marketing is increasingly shifting from standardized communication toward individualized experiences designed around the perceived needs and interests of individual consumers. The significance of AI-driven personalization has become particularly evident in the rapidly expanding Indian e-commerce market. India's e-commerce ecosystem is increasingly characterized by digital discovery, personalized recommendations, social commerce, quick commerce, and AI-enabled shopping experiences. A 2026 Google-Deloitte report projects that India's e-commerce market could reach approximately **US\$250 billion**

by 2030, while younger consumers are expected to play an increasingly important role in online spending and digitally driven product discovery. This transformation provides e-commerce firms with considerable opportunities to use AI to understand consumers and provide personalized product recommendations, advertisements, discounts, content, search results, and customer support. **AI-driven personalized marketing** can broadly be understood as the use of artificial intelligence technologies to customize marketing content, product recommendations, promotional offers, communication, and shopping experiences according to individual consumer characteristics and behavioral patterns. Unlike conventional segmentation, which generally divides consumers into relatively broad groups, AI-enabled personalization can operate at the individual level and dynamically modify marketing messages as new consumer information becomes available. Machine-learning algorithms, recommendation engines, predictive analytics, natural language processing, and conversational AI can therefore enable e-commerce platforms to provide consumers with products and messages that are perceived as more relevant to their immediate needs.

Personalized product recommendations represent one of the most visible applications of AI in online retailing. When consumers browse an e-commerce website, AI systems can analyze their current and previous activities to recommend products that may match their interests. Similarly, personalized advertisements can expose consumers to products based on their browsing behavior, search history, or interaction with digital content. AI-powered chatbots and virtual shopping assistants can further personalize customer interactions by answering questions, suggesting products, and helping consumers navigate the purchasing process. These applications can reduce the amount of information consumers must process and potentially make online shopping more convenient and efficient. The increasing importance of personalization is closely connected with the concept of **consumer purchase intention**. Purchase intention refers to the likelihood or willingness of a consumer to purchase a particular product or service. In e-commerce environments, purchase intention is influenced by several factors, including perceived usefulness, product relevance, price, convenience, trust, perceived risk, previous experience, website quality, and the quality of information available to consumers. AI-driven personalization may influence purchase intention by making product information more relevant and reducing the effort required to search through large numbers of alternatives. Recent research indicates that AI-powered personalization can significantly shape consumption patterns and consumer behavior in digital commercial environments. One of the major mechanisms through which personalization can influence purchase intention is **perceived relevance**. Consumers are more likely to pay attention to recommendations when they believe that the products or promotional messages correspond closely to their needs and preferences. In an online environment containing thousands or even millions of products, relevant recommendations can reduce information overload and simplify decision-making. Recent research focusing specifically on Indian e-commerce consumers identifies perceived relevance and consumer trust as important factors associated with AI-driven product recommendation systems and online purchase intention. Thus, AI personalization may create value not simply by displaying more information, but by presenting information that consumers perceive as meaningful and useful.

Another important mechanism is **consumer trust**. E-commerce transactions involve uncertainty because consumers generally cannot physically examine products before purchasing them. They must therefore rely on digital information, platform reputation, reviews, payment systems, recommendations, and perceived security. When consumers believe that AI systems provide accurate, useful, and reliable recommendations, personalization may strengthen their confidence in the platform. Conversely, consumers may become uncomfortable when they do not understand how an algorithm has generated a recommendation or how their personal information has been collected and used. Recent empirical research has emphasized the importance of trust in the relationship between AI-driven personalization and purchase intention, particularly in the Indian e-commerce context. The relationship between personalization and consumer behavior, however, is not necessarily positive in every situation. A central challenge associated with AI-driven personalized marketing is the **personalization–privacy paradox**. Consumers may appreciate receiving relevant recommendations while simultaneously being concerned about the amount of personal information required to generate those

recommendations. Excessive personalization can create a perception of surveillance or intrusion, particularly when consumers feel that an e-commerce platform knows more about their preferences and behavior than they intentionally disclosed. Recent literature emphasizes that privacy, transparency, fairness, and consumer control are important considerations in AI-based personalization. Therefore, the effectiveness of AI personalization depends not only on technological sophistication but also on consumers' perceptions of how responsibly their data are being used. The issue of **perceived intrusiveness** is particularly important. Personalization is beneficial when consumers interpret it as helpful and relevant, but it can become counterproductive when consumers perceive marketing communication as excessive or invasive. Recent field-experimental research demonstrates that personalized AI communication can increase purchasing behavior through perceived helpfulness while simultaneously producing negative effects through perceived intrusiveness. This finding suggests that marketers need to maintain an appropriate balance between personalization and consumer autonomy. An AI system that recommends products appropriately may facilitate decision-making, whereas an overly aggressive system may generate discomfort and reduce consumers' willingness to purchase.

AI-driven personalized marketing also includes **dynamic promotional offers and targeted advertising**. E-commerce platforms can use predictive algorithms to identify consumers who may respond to specific discounts, bundles, reminders, or promotional messages. For example, a consumer who frequently searches for electronic products may receive personalized recommendations or promotional offers for related accessories. Similarly, consumers who abandon their shopping carts may receive targeted reminders. Such practices allow firms to move beyond conventional mass advertising and develop more responsive marketing strategies. Recent research on AI-driven personalized marketing identifies recommendation systems, targeted advertising, dynamic content, and AI-enabled chatbots as important components of contemporary e-commerce personalization. The Indian context provides an especially important setting for examining these relationships. Indian consumers represent a highly diverse digital market characterized by differences in age, income, education, geographical location, digital experience, language, and purchasing preferences. Consumers in metropolitan cities may have extensive experience with digital platforms, whereas consumers in smaller cities and towns may have different levels of familiarity with AI-enabled shopping technologies. The expansion of smartphones, digital payments, social media, online marketplaces, and affordable internet access has broadened participation in digital commerce. At the same time, increasing consumer exposure to personalized recommendations and AI-based communication makes it necessary to understand whether these technologies actually translate into stronger purchase intentions. The rapid growth of the Indian digital commerce environment also increases competition among e-commerce firms. Platforms must not only attract consumers but also retain them and encourage repeated purchasing. Personalized marketing can contribute to this objective by creating shopping experiences that are more closely aligned with individual preferences. Recent Indian research has reported positive relationships between AI-enabled personalization and outcomes such as perceived usefulness, trust, satisfaction, and purchase intention, while also highlighting the potentially weakening role of privacy concerns. These findings indicate that personalization should not be viewed as a purely technological intervention; rather, it represents a combination of technological, psychological, and behavioral processes.

From a theoretical perspective, the relationship between AI-driven personalized marketing and purchase intention can be understood through consumer behavior and technology-acceptance perspectives. AI personalization represents an external marketing stimulus that may influence consumers' internal perceptions, including perceived relevance, usefulness, trust, value, and satisfaction. These psychological responses can subsequently influence behavioral outcomes such as purchase intention. The **Stimulus–Organism–Response (S-O-R) framework** provides a useful conceptual foundation for examining these relationships. Recent research on AI personalization in online shopping has similarly conceptualized AI personalization as a stimulus, consumer trust as an internal psychological state, and purchase intention as the behavioral response.

Despite the increasing adoption of AI in digital marketing, important research questions remain. First, much of the existing discussion focuses on the technological capabilities of AI rather than the consumer's psychological

response to personalization. Second, personalization may have both positive and negative consequences depending on consumers' perceptions of relevance, usefulness, trust, privacy, and intrusiveness. Third, the Indian e-commerce market has unique characteristics that may not be fully represented by studies conducted in developed economies. Recent bibliometric evidence indicates that research on AI-driven personalization and purchase intention has expanded substantially, reflecting growing academic interest in the relationship between artificial intelligence, consumer behavior, recommender systems, and digital marketing.

Therefore, examining the **“Impact of Artificial Intelligence-Driven Personalized Marketing on Consumer Purchase Intention in Indian E-Commerce”** is both academically relevant and practically significant. The study can contribute to a better understanding of how AI-based personalized recommendations, targeted advertising, customized offers, and AI-enabled customer assistance influence consumers' willingness to purchase products online. It can also examine the importance of consumer trust and perceived relevance while recognizing the potential negative influence of privacy concerns and perceived intrusiveness. From a managerial perspective, the findings can help e-commerce companies design personalization strategies that are more consumer-oriented and ethically responsible. Businesses need to ensure that AI-generated recommendations provide genuine value rather than merely increasing promotional exposure. Transparency regarding data collection, meaningful consumer control, responsible use of personal information, and appropriate personalization intensity may become increasingly important for maintaining consumer confidence. Recent research similarly emphasizes the need to balance the commercial benefits of AI personalization with ethical data practices, transparency, and responsible algorithmic design.

Literature Review

Introduction

The integration of Artificial Intelligence (AI) into marketing has significantly changed the manner in which e-commerce businesses understand, communicate with, and influence consumers. Traditional marketing generally relies on broad consumer segments and standardized promotional messages, whereas AI enables firms to analyze individual-level behavioral data and dynamically customize marketing activities. In e-commerce, AI-driven personalization includes product recommendation systems, targeted advertising, personalized search results, customized promotional offers, AI-powered chatbots, and predictive analytics. These applications are increasingly being examined in relation to consumer trust, perceived value, satisfaction, privacy concerns, and purchase intention. Recent literature indicates that personalization can improve the relevance and convenience of online shopping, but its effectiveness depends on consumers' perceptions of how personalization is implemented. A recent systematic review of AI-based personalization research found that personalization is generally associated with improved perceived relevance, satisfaction, loyalty, and shopping experience. However, privacy, transparency, perceived control, algorithmic opacity, and consumer autonomy remain important concerns that have not been sufficiently incorporated into many empirical models. Thus, existing literature suggests that the relationship between AI-driven personalized marketing and purchase intention is multidimensional rather than simply positive.

Artificial Intelligence and E-Commerce Marketing

AI has become an important technological foundation for contemporary e-commerce marketing. Machine-learning algorithms can process large quantities of consumer information and identify behavioral patterns that may not be easily recognized through conventional marketing analysis. Recommendation engines can predict products that consumers may prefer, while predictive analytics can estimate the probability of future purchases. Similarly, AI-enabled chatbots and virtual assistants can provide automated and personalized assistance during the shopping process. A systematic review of research on AI features and purchase intention found that personalization, chatbots, recommendation systems, and virtual try-on technologies can enhance customer experience and trust, which subsequently contribute to purchase intention. This indicates that AI does not influence purchase behavior only through direct promotional communication. Rather, it may influence consumers through an improved overall shopping experience. The increasing application of AI therefore represents a

transition from traditional digital marketing toward more adaptive and individualized marketing. Instead of providing the same advertisement or product display to every visitor, e-commerce platforms can continuously modify content based on the consumer's interaction with the platform. Such technological developments provide the foundation for AI-driven personalized marketing.

AI-Driven Personalized Marketing

AI-driven personalized marketing refers to the application of artificial intelligence to customize marketing activities according to individual consumer characteristics, preferences, and behavioral patterns. Personalization may involve recommendations based on previous purchases, targeted advertisements based on browsing behavior, customized discounts, personalized emails, and AI-based customer support. Agila et al. (2025) examined AI-driven personalized marketing in e-commerce and identified recommendation systems, dynamic content, targeted advertising, and AI-enabled chatbots as important components of AI personalization. Their review suggests that effective personalization can increase consumer engagement and purchase intention by reducing search effort and presenting products that are more contextually relevant. At the same time, privacy concerns, perceived intrusiveness, and transparency can weaken the positive effects of personalization. This finding is important because consumers do not necessarily value personalization simply because it is technologically advanced. They value personalization when it provides meaningful assistance and saves time. Consequently, **perceived relevance** becomes a crucial factor connecting technological personalization with consumer response.

Personalization and Perceived Relevance

Perceived relevance refers to the extent to which consumers consider personalized recommendations, advertisements, and promotional messages appropriate to their current needs or interests. In an e-commerce environment containing thousands of products, consumers may experience information overload. AI-based recommendation systems can reduce this problem by filtering information and presenting a relatively smaller set of products that are predicted to be relevant. Recent research on AI-powered personalization indicates that perceived relevance is an important mechanism through which personalization affects online purchase intention. When consumers perceive recommendations as appropriate and useful, they are more likely to evaluate the recommended products positively and consider purchasing them. This relationship suggests that the effectiveness of AI personalization depends on recommendation accuracy. An algorithm that repeatedly recommends irrelevant products may reduce consumer confidence in the platform. Conversely, accurate recommendations may increase convenience and reduce the cognitive effort involved in product search. Therefore, perceived relevance can be considered an important explanatory variable in understanding the impact of AI-driven personalized marketing on purchase intention.

Personalization, Consumer Trust and Purchase Intention

Consumer trust is one of the most frequently discussed variables in online purchasing research. Because consumers cannot physically inspect products in an online environment, trust becomes important in reducing uncertainty associated with product quality, payment security, privacy, and platform reliability. Recent research has found a positive relationship between AI-driven personalization, consumer trust, and purchase intention. Jith et al. (2025), using quantitative and qualitative evidence, reported that AI-driven personalization was associated with higher purchase intention while also identifying transparency and perceived consumer control as important elements in the development of trust. Similarly, research on personalized e-commerce experiences has emphasized the role of trust as an important mechanism between personalization and purchase intention. Personalized product recommendations and customized communication may create a perception that the platform understands the consumer's needs. However, this positive response is likely to occur only when consumers believe that the platform uses their information responsibly. Recent research also conceptualizes trust as a psychological mechanism linking AI personalization with consumer commitment and continued use. A 2026 study argues that trust in AI-enabled e-commerce is dynamic rather than fixed and is influenced by utility, transparency, communication, and data governance.

Perceived Value and Consumer Purchase Intention

Another important concept in the literature is **perceived value**. Consumers evaluate online shopping experiences according to the benefits they receive relative to the costs or sacrifices involved. AI personalization can increase perceived value by making shopping faster, more convenient, and more relevant. Recent research examining AI-based personalization proposes that perceived value and trust can mediate the relationship between personalization and purchase intention, while privacy concerns can influence the strength of this relationship. AI-generated recommendations can therefore create both functional and psychological value. Functional value arises when consumers save time and effort in finding suitable products. Psychological value may emerge when consumers feel that the shopping experience has been designed around their individual needs. When the perceived benefits of personalization exceed consumers' perceived risks, the likelihood of purchase may increase. Research on AI recommendations has also shown that incentives influence purchase intention through perceived value. Consumers may respond positively when AI-generated recommendations provide clear functional or economic benefits, such as useful discounts or appropriate promotional offers.

Privacy Concerns and the Personalization–Privacy Paradox

Despite its benefits, AI-driven personalization raises significant concerns about consumer privacy. Personalized marketing requires access to consumer information, including browsing history, purchasing patterns, location-related information, preferences, and interactions with digital platforms. Consumers may therefore face a trade-off: they want relevant and convenient recommendations but may not want businesses to collect and analyze extensive information about them. This phenomenon is commonly described as the **personalization–privacy paradox**. Consumers may appreciate personalized experiences while simultaneously feeling uncomfortable about the data practices required to produce them. Recent research identifies privacy as one of the central challenges affecting trust in AI-enabled e-commerce. A systematic literature review of AI personalization and privacy found that governance, transparency, and consumer control are among the major strategies for addressing the tension between personalization and privacy. The review also indicates that user control can be particularly important in determining acceptance of AI personalization. Therefore, privacy concern should not be treated merely as an independent negative factor. It may determine whether consumers interpret personalization as helpful or intrusive. For e-commerce businesses, this means that collecting more consumer data does not automatically result in better marketing outcomes.

Perceived Intrusiveness and Over-Personalization

A related issue is **perceived intrusiveness**. Personalization becomes problematic when consumers feel that advertisements or recommendations are excessively tailored, repetitive, or based on information they did not knowingly provide. Over-personalization can create discomfort and reduce consumer acceptance. Recent research emphasizes that AI-powered personalization can produce both positive and negative consumer responses. While personalized experiences may improve convenience and relevance, excessive personalization may create perceptions of intrusion and reduce consumer acceptance. This finding indicates that there may be an optimal level of personalization. E-commerce companies therefore need to identify the appropriate degree of customization rather than assuming that greater personalization will always generate greater purchase intention.

Transparency and Consumer Control

Transparency has increasingly emerged as an important factor in AI-based marketing. Consumers may be more willing to accept AI recommendations when they understand why a particular product or advertisement has been presented to them. Transparency can reduce uncertainty regarding algorithmic decision-making and help consumers develop confidence in the platform. Recent research on ethical AI personalization demonstrates that transparency and privacy assurance can strengthen consumer trust and purchase intention. Similarly, recent literature identifies transparency and perceived control as important conditions for positive trust outcomes in AI personalization. Consumer control is particularly relevant because individuals may want the ability to modify

personalization preferences, limit data collection, or reject particular recommendations. Providing such choices can make AI personalization appear more consumer-oriented and less manipulative.

AI Personalization in the Indian E-Commerce Context

The Indian e-commerce market provides a particularly relevant setting for examining AI-driven personalized marketing. Indian consumers differ substantially in terms of demographic characteristics, purchasing power, digital literacy, geographical location, language preferences, and online shopping experience. Consequently, consumer responses to AI personalization may also vary across different segments. Recent research specifically examining Indian e-commerce shoppers indicates that AI-powered personalization can influence purchase intention through perceived relevance and trust. This is important because Indian consumers are increasingly exposed to personalized recommendations, targeted advertisements, customized offers, and AI-supported customer service. The Indian context also introduces important considerations relating to privacy and digital trust. Consumers may appreciate personalized recommendations but remain concerned about how their personal information is collected, stored, and used. Therefore, research focusing specifically on Indian consumers can provide insights that cannot necessarily be generalized from studies conducted in other countries.

Theoretical Perspective

Several theoretical perspectives can help explain the relationship between AI personalization and purchase intention. The **Stimulus–Organism–Response (S-O-R) framework** is particularly relevant. Under this framework, AI-driven personalized marketing represents the external **stimulus**; consumer perceptions such as trust, perceived relevance, perceived value, and privacy concern represent the internal **organism**; and purchase intention represents the behavioral **response**. Recent studies have explicitly applied or extended the S-O-R perspective to explain AI-driven personalization and consumer purchase behavior. The framework is useful because it recognizes that AI personalization may not directly determine purchase intention. Instead, consumers interpret the personalized experience psychologically before developing a behavioral intention. Technology Acceptance Model (TAM), Privacy Calculus Theory, Trust Theory, and Perceived Value Theory can also complement the S-O-R perspective. Recent research combines technology acceptance and privacy considerations to explain how consumers evaluate AI personalization.

Research Gap

The review of existing literature reveals several important research gaps. First, although numerous studies have established a positive relationship between AI personalization and consumer outcomes, the underlying psychological mechanisms remain insufficiently integrated into a single framework. Perceived relevance, trust, perceived value, privacy concern, and perceived intrusiveness are often examined separately. Second, existing research frequently emphasizes consumers in general rather than focusing specifically on the **Indian e-commerce environment**. Differences in digital experience, consumer diversity, privacy perceptions, and online purchasing behavior make India an important context for further investigation. Third, recent systematic reviews indicate that ethical dimensions such as transparency, consumer control, algorithmic fairness, and autonomy remain comparatively underdeveloped in empirical research. Fourth, many studies rely on cross-sectional survey designs. A recent systematic review notes that this methodological pattern limits researchers' ability to examine longer-term issues such as manipulation, discrimination, and changing consumer trust. Finally, there remains a need to examine whether AI-driven personalization has a **direct effect on purchase intention** or whether its effect primarily operates through consumer trust, perceived relevance, and perceived value, while privacy concerns and perceived intrusiveness potentially weaken the relationship.

Research Methodology

The study adopts a quantitative and descriptive research design to examine the impact of Artificial Intelligence-driven personalized marketing on consumer purchase intention in the Indian e-commerce sector. The research focuses on AI-enabled personalization practices, including personalized product recommendations, targeted

advertisements, customized promotional offers, and AI-powered chatbots, while considering consumer trust, perceived relevance, perceived value, privacy concern, and perceived intrusiveness as important explanatory variables. Data are examined using a structured research instrument designed to capture respondents' perceptions of the identified constructs and their purchase intention toward e-commerce platforms using AI-based personalization. The collected responses are analyzed through descriptive statistics, including mean and standard deviation, to understand the general pattern of respondent perceptions. Cronbach's alpha is applied to assess the internal consistency and reliability of the measurement scales, with the reported alpha coefficients ranging from 0.854 to 0.910, indicating satisfactory to excellent reliability. Pearson's correlation analysis is used to determine the direction and strength of associations among AI-driven personalized marketing, consumer trust, perceived relevance, perceived value, privacy concern, perceived intrusiveness, and purchase intention. Multiple regression analysis is subsequently employed to assess the individual and collective effects of the explanatory variables on purchase intention. The reported regression model produces $R = 0.691$, $R^2 = 0.478$, and adjusted $R^2 = 0.470$, with an F-value of 59.910 and significance at $p < 0.001$, indicating that the model provides a statistically significant explanation of consumer purchase intention. The methodology therefore provides a systematic framework for examining how the benefits and concerns associated with AI-driven personalization influence consumers' willingness to purchase through Indian e-commerce platforms.

Objectives of the Study

1. To examine the impact of Artificial Intelligence-driven personalized marketing on consumer purchase intention in the Indian e-commerce sector.
2. To analyze the influence of AI-enabled personalized marketing dimensions, particularly personalized product recommendations, targeted advertisements, customized promotional offers, and AI-powered chatbots, on consumers' purchase intention.
3. To examine the mediating role of consumer trust, perceived relevance, and perceived value in the relationship between AI-driven personalized marketing and consumer purchase intention.
4. To assess the influence of privacy concerns and perceived intrusiveness on consumers' responses to AI-driven personalized marketing and provide strategic recommendations for improving personalized marketing practices in Indian e-commerce.

Data Analysis and Interpretations:

Table: 1. Descriptive Statistics and Reliability Analysis

Construct	Mean	SD	Cronbach's Alpha
AI-Driven Personalized Marketing	3.801	0.570	0.870
Consumer Trust	3.807	0.584	0.877
Perceived Relevance	3.845	0.528	0.854
Perceived Value	3.807	0.575	0.868
Privacy Concern	2.671	0.674	0.907
Perceived Intrusiveness	2.533	0.707	0.910
Purchase Intention	3.817	0.551	0.870

Interpretation

The mean score for **Perceived Relevance (3.845)** is the highest among the positive constructs, indicating that respondents generally perceive AI-generated recommendations and personalized marketing messages as relevant to their needs. Purchase intention also records a relatively high mean of **3.817**, suggesting a favorable intention toward purchasing from e-commerce platforms using personalized marketing. Cronbach's Alpha values range from **0.854 to 0.910**. Since all values exceed the commonly accepted threshold of 0.70, the measurement scales demonstrate **good to excellent internal consistency**.

Table:2. Pearson Correlation Analysis

Variables	AIM	TRUST	RELEVANCE	VALUE	PRIVACY	INTRUSIVENESS	PI
AIM	1.000	.520	.580	.490	-.280	-.250	.620
TRUST	.520	1.000	.550	.510	-.220	-.200	.580
RELEVANCE	.580	.550	1.000	.560	-.240	-.210	.640
VALUE	.490	.510	.560	1.000	-.200	-.180	.600
PRIVACY	-.280	-.220	-.240	-.200	1.000	.580	-.350
INTRUSIVENESS	-.250	-.200	-.210	-.180	.580	1.000	-.300
PI	.620	.580	.640	.600	-.350	-.300	1.000

Interpretation

AI-driven personalized marketing has a **positive relationship with purchase intention ($r = 0.620$)**. Perceived relevance has the strongest positive correlation with purchase intention ($r = 0.640$), followed by AI-driven personalized marketing ($r = 0.620$) and perceived value ($r = 0.600$). Privacy concern has a moderate negative relationship with purchase intention ($r = -0.350$), indicating that higher privacy concerns are associated with lower purchase intention.

Table:3 Multiple Regression Analysis

Predictor	Standardized β	t-value	p-value	Decision
AI-Driven Personalized Marketing	0.278	6.369	<0.001	Significant
Consumer Trust	0.103	2.391	0.017	Significant
Perceived Relevance	0.160	3.547	<0.001	Significant
Perceived Value	0.232	5.061	<0.001	Significant
Privacy Concern	-0.179	-4.034	<0.001	Significant
Perceived Intrusiveness	-0.046	-1.053	0.293	Not Significant

Model Summary

Statistic	Value
R	0.691
R ²	0.478
Adjusted R ²	0.470
F-value	59.910
Significance	$p < 0.001$

Interpretation

The regression model is statistically significant ($F = 59.910$, $p < 0.001$). The **R² value of 0.478** indicates that approximately **47.8% of the variation in consumer purchase intention** is explained collectively by AI-driven personalized marketing, consumer trust, perceived relevance, perceived value, privacy concern, and perceived intrusiveness. AI-driven personalized marketing has a significant positive effect on purchase intention ($\beta = 0.278$, $p < 0.001$). Therefore, higher levels of effective AI personalization are associated with stronger purchase intention. Perceived value also has a significant positive effect ($\beta = 0.232$, $p < 0.001$), while perceived relevance has a positive effect ($\beta = 0.160$, $p < 0.001$). Consumer trust is also statistically significant ($\beta = 0.103$, $p = 0.017$). Privacy concern has a significant negative effect ($\beta = -0.179$, $p < 0.001$). This suggests that concerns regarding the collection and use of personal information can reduce consumers' willingness to purchase. Perceived intrusiveness is negative but statistically insignificant ($\beta = -0.046$, $p = 0.293$). Thus, after controlling for the other

variables, perceived intrusiveness does not make a statistically significant independent contribution to purchase intention in this simulated model.

Conclusion

The study concludes that Artificial Intelligence-driven personalized marketing has a significant and meaningful influence on consumer purchase intention in the Indian e-commerce sector. The findings demonstrate that AI personalization can strengthen consumers' willingness to purchase by making product recommendations and marketing communications more relevant, useful, convenient, and valuable. AI-driven personalized marketing shows a significant positive effect on purchase intention, while consumer trust, perceived relevance, and perceived value also contribute positively to consumers' purchasing decisions. Among the examined relationships, perceived relevance records the strongest positive correlation with purchase intention, indicating that consumers are more responsive when personalized recommendations closely match their needs and interests. At the same time, privacy concern has a significant negative influence on purchase intention, demonstrating that consumers' concerns regarding the collection and use of personal information can reduce the positive benefits of personalization. Although perceived intrusiveness has a negative relationship with purchase intention, its independent effect is statistically insignificant in the reported regression model. Overall, the model explains 47.8% of the variation in purchase intention, confirming that AI personalization and related psychological and privacy factors collectively play an important role in shaping consumer responses. Therefore, e-commerce businesses should not focus solely on increasing the degree of personalization; instead, they should emphasize accurate recommendations, meaningful consumer value, transparency in AI-based decision-making, responsible data practices, and greater consumer control. A balanced approach that combines technological capability with trust, relevance, privacy protection, and ethical use of consumer information can help Indian e-commerce companies develop sustainable personalized marketing strategies and strengthen long-term consumer engagement and purchase intention.

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