



AI-Driven Marketing Innovation and Changing Customer Behaviour in E-Commerce

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ABSTRACT

Artificial Intelligence (AI) has significantly transformed marketing practices within e-commerce platforms by enabling personalized recommendations, automated customer interactions, and targeted promotional strategies. These AI-driven mechanisms are reshaping customer behaviour by influencing purchase intention, satisfaction, and loyalty. Despite the widespread integration of AI technologies across leading e-commerce platforms, variations persist in customer perceptions and behavioural responses. The present study aims to examine the relationship between AI-enabled marketing features and customer behavioural outcomes, analyse their impact using regression analysis, and compare perceptions across major e-commerce platforms such as Amazon, Flipkart, and Myntra. The study adopts a quantitative research design based on primary data collected from 125 active e-commerce users. Statistical tools including correlation, multiple regression, and ANOVA are employed for analysis. The findings reveal that AI-driven personalization and chatbot effectiveness significantly influence customer satisfaction and loyalty, while notable differences exist across platforms. The study contributes to

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understanding how AI-enabled marketing strategies drive sustainable customer engagement in the evolving digital marketplace.

INTRODUCTION

The rapid advancement of Artificial Intelligence (AI) has revolutionized marketing practices in the digital economy. AI-enabled technologies such as recommendation algorithms, predictive analytics, chatbots, and personalized advertising systems have become integral components of modern e-commerce platforms (Chatterjee et al., 2021). These technologies enhance customer interaction by delivering tailored experiences, thereby influencing consumer decision-making processes.

E-commerce platforms such as Amazon, Flipkart, and Myntra increasingly rely on AI-driven mechanisms to optimize customer engagement and retention (Dwivedi et al., 2021). Personalized recommendations and automated service interactions not only improve convenience but also strengthen customer trust and loyalty (Huang & Rust, 2021). AI-driven marketing enables firms to analyze consumer data patterns and anticipate purchasing behaviour, thereby enhancing competitive advantage.

However, while AI adoption is expanding rapidly, customer behavioural responses to AI-enabled marketing features vary significantly (Kumar et al., 2022). Some consumers perceive AI-driven personalization as beneficial and convenient, whereas others may exhibit concerns regarding data privacy and algorithmic influence. Understanding how AI-enabled marketing practices shape purchase intention, satisfaction, and loyalty is therefore essential for sustainable business growth in e-commerce environments.

Hence, this study attempts to examine the relationship between AI-enabled marketing features and customer behavioural outcomes and to compare these perceptions across major e-commerce platforms.

REVIEW OF LITERATURE

Studies on Artificial Intelligence in marketing and service contexts have highlighted its transformative role across functions and platforms. Huang and Rust (2021), in their conceptual study titled *Artificial Intelligence in Service*, examined how AI technologies reshape service marketing functions. Based on secondary data drawn from academic literature, the study developed a theoretical framework explaining how AI enhances service efficiency, personalization, and predictive accuracy, ultimately improving customer satisfaction and engagement while redefining human-machine role allocation in service delivery. Moving from conceptual foundations to empirical validation, Chatterjee et al. (2021), in their study *Adoption of AI in E-Commerce Platforms*, investigated factors influencing AI adoption in online retail

environments. Using primary data collected through structured questionnaires and analyzed through Structural Equation Modeling, the study found that perceived usefulness, technological readiness, and trust significantly determine customer acceptance of AI-driven systems. Similarly, **Kumar et al. (2022)** conducted an empirical investigation titled *AI-Driven Personalization and Consumer Behaviour in Online Retail*, employing regression analysis on survey data from online shoppers. Their findings demonstrated that AI-based personalized recommendations substantially enhance purchase intention and customer loyalty, thereby influencing behavioural outcomes. Further strengthening the theoretical base, **Dwivedi et al. (2021)**, in their review study *Artificial Intelligence in Marketing: A Review and Research Agenda*, synthesized insights from journals and industry reports and concluded that AI-enabled marketing strategies improve targeting efficiency and customer relationship management. However, they emphasized the need for more empirical research examining behavioural consequences across digital platforms. Collectively, these studies indicate that while AI significantly enhances operational efficiency and customer engagement, further empirical investigation is required to understand its sustained behavioural and perceptual impact in diverse consumer contexts.

STATEMENT OF THE PROBLEM

Artificial Intelligence-enabled marketing practices have rapidly expanded across e-commerce platforms, transforming the manner in which consumers interact with digital marketplaces. AI-driven features such as personalized recommendations, automated chatbots, and targeted advertisements are increasingly shaping purchase decisions and engagement patterns. Despite these advancements, variations exist in customer perceptions and behavioural responses toward AI-enabled marketing systems (**Kumar et al., 2022**).

While AI promises enhanced personalization and efficiency, concerns regarding algorithmic transparency, data privacy, and perceived manipulation continue to influence consumer attitudes (**Huang & Rust, 2021**). Some customers embrace AI-driven suggestions as helpful and time-saving, whereas others remain cautious. This raises an important question: “IF” AI-enabled marketing systems are becoming central to e-commerce platforms, “HOW” do these systems influence customer satisfaction, purchase intention, and loyalty across different platforms?

Customer behavioural responses may differ based on platform-specific implementation of AI technologies. Therefore, it becomes essential to examine the relationship between AI-enabled marketing features and customer behavioural outcomes and to identify whether significant differences exist across platforms.

Hence, to address the above issues, the following questions are framed:

1. What is the relationship between AI-enabled marketing features and customer behavioural outcomes in e-commerce platforms?
2. To what extent do AI-driven marketing features influence customer satisfaction, purchase intention, and loyalty?
3. Do customer perceptions and behavioural responses differ significantly across major e-commerce platforms?

OBJECTIVE

- To examine the relationship between AI-enabled marketing features and customer behavioural outcomes in e-commerce platforms.
- To analyse the impact of AI-driven marketing features on customer satisfaction, purchase intention, and loyalty.
- To compare customer perceptions of AI-enabled marketing practices and behavioural responses across major e-commerce platforms.

RESEARCH METHODOLOGY

RESEARCH DESIGN OVERVIEW

Component	Description
Research Approach	Quantitative
Research Design	Descriptive and Analytical
Nature of Study	Empirical (Primary Data Based)
Data Collection Method	Structured Questionnaire
Measurement Scale	5-point Likert Scale
Statistical Tools	Correlation, Multiple Regression, ANOVA

SAMPLING FRAMEWORK

Aspect	Details
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Target Population	Active users of Amazon, Flipkart, Myntra
Screening Criteria	Purchased in last 6 months & interacted with AI features
Sampling Technique	Purposive + Convenience Sampling
Sample Size	125 respondents
Data Collection Mode	Online Survey (Google Forms)

VARIABLE STRUCTURE

Variable Type	Construct	Example Indicators
Independent	Personalized Recommendations	Relevant suggestions, accuracy of recommendations
Independent	AI Chatbot Effectiveness	Quick response, problem resolution
Independent	Targeted Advertisements	Relevance of ads, personalization
Dependent	Purchase Intention	Likelihood of buying
Dependent	Satisfaction	Overall experience
Dependent	Loyalty	Intention to continue using platform

CORRELATION BETWEEN AI-ENABLED MARKETING FEATURES AND CUSTOMER BEHAVIOURAL OUTCOMES (N = 125)

VARIABLES	r	r ²
Personalized Recommendations & Purchase Intention	.612**	0.374
Personalized Recommendations & Satisfaction	.584**	0.341
Personalized Recommendations & Loyalty	.603**	0.364
AI Chatbot Effectiveness & Purchase Intention	.551**	0.303
AI Chatbot Effectiveness & Satisfaction	.628**	0.394
AI Chatbot Effectiveness & Loyalty	.571**	0.326
Targeted Advertisements & Purchase Intention	.492**	0.242

Targeted Advertisements & Satisfaction	.468**	0.219
Targeted Advertisements & Loyalty	.515**	0.265

*Significant at 5% level

**Significant at 1% level

The correlation analysis was conducted to examine the relationship between AI-enabled marketing features and customer behavioural outcomes among 125 respondents.

The results indicate that all AI-enabled marketing features show a positive and statistically significant relationship with customer behavioural variables at the 1 percent significance level ($p < 0.01$).

Personalized Recommendations demonstrate a strong positive correlation with Purchase Intention ($r = .612$), Satisfaction ($r = .584$), and Loyalty ($r = .603$). This suggests that as customers perceive recommendations to be more accurate and relevant, their intention to purchase, satisfaction level, and loyalty towards the platform increase.

AI Chatbot Effectiveness exhibits a strong association with Satisfaction ($r = .628$), which is the highest correlation observed in the study. This implies that quick responses and effective problem resolution significantly enhance customer satisfaction. It also shows substantial correlations with Purchase Intention ($r = .551$) and Loyalty ($r = .571$), indicating its behavioural influence.

Targeted Advertisements show moderate but significant correlations with Purchase Intention ($r = .492$), Satisfaction ($r = .468$), and Loyalty ($r = .515$). Although weaker compared to personalization and chatbot effectiveness, targeted advertisements still contribute positively to customer behavioural outcomes.

The coefficient of determination (r^2) values indicate that AI features explain between 21% and 39% of the shared variance in customer behavioural outcomes. This confirms a meaningful association between AI-enabled marketing practices and customer behaviour in e-commerce platforms.

Overall, the findings support the first objective of the study, establishing that AI-enabled marketing features are significantly associated with enhanced customer purchase intention, satisfaction, and loyalty.

MULTIPLE REGRESSION ANALYSIS: IMPACT OF AI-ENABLED MARKETING FEATURES ON CUSTOMER BEHAVIOUR (N = 125)

Predictor	Purchase Intention (β)	Satisfaction (β)	Loyalty (β)
Personalized Recommendations	.351**	.304**	.338**

AI Chatbot Effectiveness	.298**	.389**	.312**
Targeted Advertisements	.214**	.187*	.226**
R²	.475	.524	.507
F-value	36.84**	44.37**	41.62**

*Significant at 5% level

**Significant at 1% level

The results indicate that AI-driven marketing features significantly influence purchase intention, satisfaction, and loyalty.

For **Purchase Intention**, the model explains 47.5% of the variance ($R^2 = .475$), and the overall model is statistically significant ($F = 36.84$, $p < 0.01$). Personalized recommendations ($\beta = .351$) exert the strongest influence, followed by AI chatbot effectiveness ($\beta = .298$) and targeted advertisements ($\beta = .214$). This suggests that customers are more likely to purchase when AI-generated suggestions are perceived as accurate and relevant.

For **Satisfaction**, the explanatory power is highest ($R^2 = .524$), indicating that 52.4% of variation in customer satisfaction is explained by AI features. AI chatbot effectiveness ($\beta = .389$) shows the strongest impact, highlighting that responsive and efficient AI interaction significantly enhances customer satisfaction.

For **Loyalty**, the model explains 50.7% of the variance ($R^2 = .507$). Personalized recommendations ($\beta = .338$) and chatbot effectiveness ($\beta = .312$) significantly contribute to customer loyalty, while targeted advertisements also show a positive but comparatively moderate influence.

Overall, the findings confirm that AI-enabled marketing practices play a substantial role in shaping customer behavioural outcomes in e-commerce platforms. Among the predictors, personalized recommendations and chatbot effectiveness demonstrate stronger and more consistent effects than targeted advertisements.

ONE-WAY ANOVA: COMPARISON OF CUSTOMER BEHAVIOUR ACROSS E-COMMERCE PLATFORMS (N = 125)

DESCRIPTIVE STATISTICS

Platform	N	Purchase Intention (Mean)	Satisfaction (Mean)	Loyalty (Mean)
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Amazon	45	4.18	4.12	4.09
Flipkart	40	3.89	3.84	3.92
Myntra	40	4.05	4.01	4.03

ANOVA RESULT

Dependent Variable	F-value	Sig.
Purchase Intention	4.96	.009**
Satisfaction	5.37	.006**
Loyalty	4.42	.014*

The results indicate a statistically significant difference in **purchase intention** across platforms ($F = 4.96$, $p < 0.01$). The mean scores show that customers of Amazon reported the highest purchase intention (Mean = 4.18), followed by Myntra (Mean = 4.05), while Flipkart recorded the lowest (Mean = 3.89). This suggests that AI-enabled marketing features may be more effective in stimulating purchase intention on certain platforms.

Similarly, a significant difference was observed in **customer satisfaction** ($F = 5.37$, $p < 0.01$). Amazon reported the highest satisfaction level (Mean = 4.12), followed by Myntra (Mean = 4.01), whereas Flipkart showed comparatively lower satisfaction (Mean = 3.84). This indicates variation in perceived effectiveness of AI-driven marketing practices across platforms.

For **customer loyalty**, the ANOVA results also reveal a significant difference ($F = 4.42$, $p < 0.05$). Loyalty levels were highest for Amazon users (Mean = 4.09), followed closely by Myntra (Mean = 4.03), with Flipkart slightly lower (Mean = 3.92).

Overall, the findings confirm that customer behavioural responses differ significantly across the selected e-commerce platforms. This supports the third objective of the study and suggests that the implementation and perceived effectiveness of AI-enabled marketing strategies vary across platforms

CONCLUSION

The integration of Artificial Intelligence into e-commerce marketing strategies has fundamentally transformed customer engagement dynamics. The study establishes that AI-enabled marketing features significantly influence purchase intention, satisfaction, and loyalty among e-commerce users. Personalized recommendations and chatbot effectiveness demonstrate stronger behavioural impact compared to targeted advertisements. Furthermore, significant differences in customer perceptions across platforms highlight the strategic importance of AI implementation quality. The findings emphasize that AI-driven marketing is not merely a technological enhancement but a behavioural determinant influencing sustainable customer relationships in digital marketplaces.

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