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THE IMPACT OF ARTIFICIAL INTELLIGENCE ON CONSUMER BEHAVIOUR AND PURCHASE DECISIONS IN E-COMMERCE: EVIDENCE FROM INDIA

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ABSTRACT

Artificial Intelligence (AI) is transforming electronic commerce through personalised product recommendations, intelligent chatbots, predictive analytics, and automated customer support. These applications may influence how consumers search for products, evaluate alternatives, develop trust, and form purchase intentions. This study proposes an empirical investigation of AI-enabled shopping features among online shoppers in Hyderabad, Telangana, India. It focuses on perceived relevance of AI-powered recommendations, AI-driven personalisation, chatbot effectiveness, consumer trust, and perceived privacy risk in relation to purchase intention. The proposed framework draws on the Technology Acceptance Model and established research on trust in online shopping. Primary data are to be collected through a structured questionnaire using a five-point Likert scale. A target of 200–300 eligible respondents is proposed, subject to access and an appropriate sample-size justification. Descriptive statistics, reliability analysis, correlation, and multiple regression are proposed for analysis. As the survey has not yet been conducted, this manuscript does not report empirical findings. The study is designed to provide context-specific evidence on consumer perceptions of AI-enabled e-commerce in Hyderabad and to inform platform decisions concerning personalisation, customer service, privacy, and responsible AI adoption.

KEYWORDS: Artificial intelligence; e-commerce; consumer behaviour; purchase intention; consumer trust; privacy risk.

1. INTRODUCTION

Electronic commerce has changed how consumers discover, compare, purchase, and evaluate products and services. Online platforms provide broad product assortments, digital payment facilities, customer reviews, and delivery services. As competition intensifies, businesses increasingly use advanced technologies to improve customer engagement and shopping convenience. Artificial Intelligence (AI) is an important part of this transformation.

AI includes computational methods that support tasks such as learning from data, recognising patterns, generating predictions, and processing natural language. In e-commerce, applications include product recommendation engines, conversational chatbots, visual search, automated customer support, fraud detection, and personalised promotions. These applications may reduce search effort and help consumers identify products that match their preferences.

The effects of AI are not necessarily positive in every situation. Consumers may question the accuracy of automated recommendations, dislike repetitive or intrusive personalisation, or worry about how their data are collected and used. Chatbots may also fail to resolve complex questions. An adequate study must therefore consider both perceived benefits and perceived risks.

India provides a relevant setting for this research because digital shopping has become an important component of retail. Hyderabad is selected as the geographical setting because the city includes consumers with varied educational, occupational, and shopping backgrounds. However, a study confined to Hyderabad should not be generalised to all Indian consumers without appropriate sampling evidence.

STATEMENT OF THE PROBLEM

E-commerce platforms increasingly use AI to personalise product discovery and automate customer interactions. Yet the extent to which consumers perceive these features as useful, trustworthy, and influential in their purchase decisions requires empirical investigation. A recommendation may attract attention without resulting in a purchase; a chatbot may respond quickly but fail to resolve a problem; and personalisation may improve convenience while raising privacy concerns. This study proposes to examine the relationships between AI-enabled features, consumer trust, perceived privacy risk, and purchase intention among online shoppers in Hyderabad.

OBJECTIVES OF THE STUDY

- To examine the relationship between perceived relevance of AI-powered product recommendations and purchase intention.
- To assess the relationship between AI-driven personalisation and purchase intention.
- To investigate the relationship between perceived AI chatbot effectiveness and purchase intention.
- To examine the relationship between consumer trust and purchase intention in AI-enabled e-commerce.
- To assess the relationship between perceived privacy risk and purchase intention.

2. LITERATURE REVIEW

The Technology Acceptance Model (TAM), developed by Davis (1989), identifies perceived usefulness and perceived ease of use as important determinants of technology acceptance. In e-commerce, consumers may be more willing to use AI-powered recommendations and chatbots when these features simplify product searches, provide relevant information, and improve shopping convenience. Jain et al. (2024) reviewed AI and consumer behaviour, highlighting themes such as technology acceptance, trust, engagement, and purchase decision-making, while Bawack et al. (2022) examined the development of AI research in e-commerce. Recommendation systems use browsing histories, purchase records, product attributes, and inferred preferences to suggest relevant products, potentially reducing information overload. Chinchanachokchai et al. (2021) investigated AI-based product recommendations and the moderating role of consumer expertise, emphasising the importance of individual consumer characteristics. Similarly, Chen et al. (2022) examined web personalisation in relation to consumer trust, privacy concerns, and behavioural responses, indicating the importance of balancing convenience with data privacy. AI chatbots further support online shopping by answering routine queries, explaining product features, and providing order-related information. Jiang et al.

3. MATERIALS AND METHODS

3.1 RESEARCH DESIGN

The study proposes a quantitative, cross-sectional, descriptive and explanatory design. Descriptive analysis will summarise respondents' characteristics and perceptions; explanatory analysis will test hypothesised associations among the constructs. Because the data will be

collected at one point in time, the design can identify associations but cannot establish temporal precedence or prove causality.

3.2 POPULATION AND ELIGIBILITY

The target population is adults aged 18 years or above who reside in Hyderabad and have purchased products or services online during the preceding six months. Respondents will also be asked whether they have encountered AI-enabled recommendations, personalisation, or chatbots. Where a respondent has not encountered a feature, the questionnaire should allow a 'not encountered/not sure' response rather than forcing an opinion.

3.3 SAMPLE SIZE AND SAMPLING

A target of 200–300 completed questionnaires is proposed, subject to access and an a priori power analysis based on the planned regression model, anticipated effect size, significance level, and desired power. Convenience sampling may be used through educational institutions, professional networks, community groups, and online distribution. Recruitment should be diversified across age groups, occupations, and shopping frequency where feasible. Convenience sampling is practical but may introduce selection bias and does not establish representativeness of all Hyderabad consumers.

3.4 DATA COLLECTION AND INSTRUMENT

Primary data will be collected using a structured questionnaire. Items will use a five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). The proposed items are study-specific drafts and should be reviewed by subject experts and pilot-tested before the main survey. A pilot involving approximately 20–30 eligible respondents is recommended to assess wording, completion time, and response options. If the instrument is materially revised, pilot responses should not automatically be merged with the main dataset.

3.5 VARIABLES AND MEASUREMENT

Construct	Proposed measurement	Role
Recommendation relevance	Perceived relevance and usefulness of suggested products	Predictor
AI personalisation	Perceived tailoring and convenience of shopping experience	Predictor
Chatbot effectiveness	Perceived clarity, accuracy, and usefulness of responses	Predictor
Consumer trust	Confidence in the reliability of AI-enabled platform features	Predictor
Privacy risk	Concern about collection and use of personal	Predictor

Construct	Proposed measurement	Role
	information	
Purchase intention	Willingness or intention to consider purchasing after AI-enabled assistance	Outcome

3.6 HYPOTHESES

- H1: Perceived relevance of AI-powered product recommendations is positively associated with purchase intention.
- H2: Perceived effectiveness of AI-driven personalisation is positively associated with purchase intention.
- H3: Perceived effectiveness of AI chatbots is positively associated with purchase intention.
- H4: Consumer trust in AI-enabled e-commerce is positively associated with purchase intention.
- H5: Perceived privacy risk is negatively associated with purchase intention.

3.7 STATISTICAL ANALYSIS

Frequencies, percentages, means, and standard deviations will describe the sample and item responses. Internal consistency of multi-item constructs will be assessed using Cronbach's alpha, interpreted alongside item quality and construct definition; alpha alone does not establish validity. Correlation analysis will assess bivariate relationships. Pearson correlation will be used where assumptions are reasonably met; Spearman correlation may be preferred for ordinal or markedly non-normal data.

Multiple regression will model purchase intention as the dependent variable and the five proposed constructs as predictors. Diagnostics will examine missing data, outliers, linearity, residual patterns, heteroscedasticity, and multicollinearity, including variance inflation factors. The report should include the number of observations analysed, coefficient estimates, confidence intervals, p-values, R-squared and adjusted R-squared, and relevant diagnostics. A conventional significance threshold of .05 may be used, with exact p-values reported where possible.

The proposed regression equation is: Purchase Intention = β_0 + β_1(Recommendation Relevance) + β_2(Personalisation) + β_3(Chatbot Effectiveness) + β_4(Consumer Trust) + β_5(Privacy Risk) + ε. The coefficients will be estimated only after the actual data have been collected and cleaned.

3.8 ETHICAL CONSIDERATIONS

Participation should be voluntary and based on informed consent. Respondents should be informed of the research purpose, confidentiality arrangements, and intended academic use of the data. Unnecessary identifying information should not be collected, and data should be stored securely with access limited to the research team. Any institutional ethics approval or permission required by the researcher's institution should be obtained before data collection.

4. RESULTS AND DISCUSSION

No primary survey data were supplied for preparation of this manuscript, and the survey has not been reported as completed. Therefore, this section does not present sample demographics, descriptive statistics, correlations, regression coefficients, p-values, or hypothesis decisions. Reporting such values without observed data would constitute fabrication.

After data collection, this section should first describe the respondent profile and exposure to AI-enabled features. It should then report measurement reliability and the correlation matrix, followed by the regression model and diagnostic checks. Each hypothesis should be classified according to the observed estimate and its uncertainty, not according to the expected direction.

A positive and statistically significant coefficient for recommendation relevance would be consistent with H1; the same logic applies to H2–H4. A negative and statistically significant coefficient for privacy risk would be consistent with H5. A non-significant result would mean that the analysis did not provide sufficient evidence for the proposed association in the analysed sample; it would not prove that the relationship never exists.

The discussion should compare actual findings with Davis (1989), Gefen et al. (2003), Bawack et al. (2022), Chen et al. (2022), and other verified studies. Any differences should be interpreted in light of sampling, measures, platforms used, and the local context. This section must be completed with real results before the manuscript is submitted as an empirical research paper.

5. CONCLUSION

AI-enabled recommendations, personalisation, and chatbots create opportunities to improve product discovery and customer assistance in e-commerce. Their value to consumers may depend on perceived usefulness, trust, accuracy, and concerns about personal data. This manuscript proposes a Hyderabad-based primary survey to examine these factors in relation

to purchase intention. The conceptual framework draws on technology acceptance and online trust research and distinguishes among several AI-enabled features rather than treating AI as a single construct.

The proposed analysis can provide useful local evidence if implemented with a clearly defined sample, an adequately tested questionnaire, and transparent statistical procedures. At present, however, the manuscript is a research-paper draft and protocol, not a completed empirical study. Its conclusions about the hypotheses and practical recommendations must be finalised only after real survey responses are analysed.

REFERENCES

1. Bawack, R. E., Wamba, S. F., Carillo, K. D. A., & Akter, S. (2022). Artificial intelligence in e-commerce: A bibliometric study and literature review. Electronic Markets, 32(1), 297–338. https://doi.org/10.1007/s12525-022-00537-z
2. Chen, X., Sun, J., & Liu, H. (2022). Balancing web personalization and consumer privacy concerns: Mechanisms of consumer trust and reactance. Journal of Consumer Behaviour, 21, 572–582. https://doi.org/10.1002/cb.1947
3. Chinchanachokchai, S., Thontirawong, P., & Chinchanachokchai, P. (2021). A tale of two recommender systems: The moderating role of consumer expertise on artificial intelligence-based product recommendations. Journal of Retailing and Consumer Services, 61, Article 102528. https://doi.org/10.1016/j.jretconser.2021.102528
4. Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS Quarterly, 13(3), 319–340. https://doi.org/10.2307/249008
5. Gefen, D., Karahanna, E., & Straub, D. W. (2003). Trust and TAM in online shopping: An integrated model. MIS Quarterly, 27(1), 51–90. https://doi.org/10.2307/30036519
6. India Brand Equity Foundation. (n.d.). E-commerce industry in India. https://www.ibef.org/industry/ecommerce
7. Jain, V., Wadhwani, K., & Eastman, J. K. (2024). Artificial intelligence consumer behavior: A hybrid review and research agenda. Journal of Consumer Behaviour, 23(2), 676–697. https://doi.org/10.1002/cb.2233
8. Jiang, K., Qin, M., & Li, S. (2022). Chatbots in retail: How do they affect the continued use and purchase intentions of Chinese consumers? Journal of Consumer Behaviour, 21(4), 756–772.
9. Li, L., Lee, K. Y., Emokpae, E., & Yang, S.-B. (2022). When do AI chatbots lead to higher customer satisfaction than human frontline employees in online shopping assistance? Considering product attribute type. Journal of Retailing and Consumer Services, 68, Article 103059. https://doi.org/10.1016/j.jretconser.2022.103059