International Journal of Science, Strategic Management and Technology
Volume **02** Issue **11** November-2026 | ISSN: **3108-1762 (Online)** | Impact Factor: 3.8
An International, Peer-Reviewed, Open Access Scholarly Journal Indexed in recognized academic databases

AI-Driven Consumer Decision-Making among Higher Education Students: Examining the Roles of Adoption, Trust and Personalization

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https://doi.org/10.55041/ijsmt.v2i11.031

Cite this Article: MASOOD, T. (2026). AI-Driven Consumer Decision-Making among Higher Education Students: Examining the Roles of Adoption, Trust and Personalization. International Journal of Science, Strategic Management and Technology, *02*(11), 1-9. https://doi.org/10.55041/ijsmt.v2i11.031

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Abstract

The digital space where higher-education students find products, compare them, get personalised recommendations and make online purchases is becoming more and more interwoven with artificial intelligence. This paper analyses the relationship between the adoption of AI, confidence in AI-based recommendations and AI-based personalisation and consumer purchasing behaviour amongst higher learning institutions. Two-way (quantitative) cross-sectional methodology is demonstrated using the simulated sample of 150 objects in the form of a quantitative cross-sectional study. A five-point Lickert scale has been designed in the form of a structured question to embrace AI adoption, AI trust, AI personalisation and consumer buying behaviour. Applying reliability analysis, descriptive statistics, Pearson correlation, one-way ANOVA and exploratory multiple regression. The simulated analysis shows a high internal consistency among the constructs and positive correlations between AI-related variables and buying behaviour. The differences in buying behaviour among the levels of AI experience may also be found, and the exploratory regression shows that the composite AI variables present a significant explanatory amount of variance. These numerical findings are explicitly exemplary and are not findings in reality by actual respondents. The research offers the student through the lens based on a convenient framework aimed at studying the potential role of convenience, trust, personalisation and perceived control in influencing purchases by AI in the context of higher education.

Keywords: Artificial Intelligence; Consumer Buying Behaviour; Higher Education; AI Personalisation; Consumer Trust; Purchase Decision; Digital Consumer Behaviour.

1. Introduction

Artificial intelligence “has ceased to be used in the automation of organisations and has introduced itself to the consumer sphere. Recommendation engine, chatbots, personalised advertisements, predictive search and AI-generated product information affect consumer discovery and evaluation processes of products. The importance of the higher-education students group is particularly relevant since they tend to utilize digital platforms more often, being introduced to digital-form information around the purchase process being algorithmically progressed. Recent, more systematic evidence points to consumer experience, convenience, personalisation, trust, security and autonomous purchasing as dimensions of consumer behaviour that are interrelated with AI mediation.

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Generative AI provides a conversatory aspect to the buying experience. An AI system can be requested to compare products by consumers, elucidate the features, and propose purchases or find alternatives. A recent survey of 134 Scopus publications states that personalisation, trust and decision-making are the key themes of the survey and emphasizes the TAM, UTAUT, and trust-based perspectives. Meanwhile, AI-mediated consumption calls into question privacy, transparency and perceived control. Recent research in the area of personalised recommendations indicates that the perception of control can lead to consumer trust and judgments of algorithmic recommendations. The current research then analyses the adoption of AI and trust and personalisation as the supplementary variables of the purchasing behaviour of higher-education customers.

2. Literature Review

Based on 373 Web of Science articles, Ribeiro et al. (2025) named consumer experience, relationships, online challenges, functionality and autonomous purchasing as key clusters of research. Among the essential dimensions of AI-consumer relationship, convenience, effectiveness, trust, and security and personalisation were realised.

Sondari et al. (2025) searched 117 articles with a Scopus index and found that the number of articles exploring AI and consumer behaviour began to grow quickly after 2020. Their study proves the growing role of machine learning and natural-language technologies in consumer decision-making.

Panda et al. (2026) used 134 Scopus publications and suggested an ADO model, which connects technological antecedents, consumer decisions, and consumer outcomes. Important themes were personalisation, trust and decision-making.

Xu and Chen (2025) explored the topic of personalised recommendation, using the perceived-control theory, and mentioned a conflict between efficiency and worries about an algorithmic takeover.

According to Lopez-Lopez and Bara Iniesta (2025), the important clusters of conversational-AI research were consumer interest, sentiment analysis, AI marketing, trust, technology usage and predictive analytics.

Consumer data is the key to AI personalisation, which is associated with a trade-off between privacy and relevance. Recent studies find that privacy concern is a significant state that influences the trust and purchase intention.

Emerging Gap

The body of existing research offers a fair amount of evidence of AI and consumer behaviour, yet a limited number of studies concentrate on higher-education students and at the same time on the topic of AI adoption, trust and personalisation. It is this gap in literature that is addressed in this study.

Research Gap

The literature reveals that AI is changing consumer behaviour, although significant gaps of empirical data exist. Several of the available studies focus on generally online shoppers or organisational uses instead of universities and colleges as a particular consumer group. A single mechanism like trust or personalisation is often isolated in studies as well. The current research synthesises the concept of AI adoption, trust and personalisation into an exploratory conceptual framework of student consumer buying behaviour and introduces a contribution of evidence within the context of higher education.

Objectives of the Study

1. To explore the application of AI-powered consumer technologies with higher-education students.
2. To measure the trust of AI-based recommendations and purchase support.
3. To assess the perceptions of personalised AI when searching and evaluating the products.
4. Defining whether the user adoption of AI, trust and personalisation are related to consumer buying behaviour.
5. To investigate differences in purchasing behaviour in terms of AI experience levels.
6. To establish a much-needed exploratory model on the basis of the buying behaviour explaining AI-related variables.

Hypotheses

H1: H 1: There exists a strong positive relationship between AI adoption and consumer buying behavior.

H2: There is a significant positive correlation present between consumer trust of AI and consumer buying behavior.

H3: AI personalization has a strong positive relationship with consumer buying behavior.

H4: Consumer purchasing behavior varies significantly between AI experience depending on levels.

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H5: AI adoption, AI trust and AI personalization are significant combined and explain a large portion of consumer buying"behavior variance.

Research Methodology

The research "is a quantitative, cross-sectional, and explanatory research. To create the desired statistical presentation, a simulated dataset with 150 observations was developed. These are not real survey answers and cannot be termed as primary data surveys among the students. The questionnaire will contain 26 five point Likert-scale questions: seven in AI Adoption, six in AI Trust, six in AI Personalisation and seven in Consumer Buying Behaviour. The statistical sequence that is proposed includes Cronbach alpha, descriptive statistics, Pearson correlation, one way ANOVA and exploratory multiple regression.

Variables and Measurement

Construct	Items	Measurement focus
AI Adoption	7	AI recommendations, AI search, conversational assistance and AI-supported discovery
AI Trust	6	Accuracy, reliability, security, confidence and consistency
AI Personalisation	6	Relevance, preference matching, tailored recommendations and convenience
Consumer Buying Behaviour	7	Information search, alternative evaluation, purchase intention and AI-influenced choice

Proposed Conceptual Model

AI Adoption + AI Personalisation → Consumer Trust → Consumer Buying Behaviour AI Adoption + AI Personalisation -> Consumer Buying Behaviour. The model proposed considers trust as a significant consumer evaluation process and accepts the fact that adoption and personalisation could be directly related to buying behaviour as well. The future studies should test formal mediation as opposed to virtue of correlation.

Reliability Analysis

Construct	Items	Cronbach's α	Interpretation
AI Adoption	7	0.919	High internal consistency
AI Trust	6	0.905	High internal consistency
AI Personalization	6	0.891	High internal consistency
Consumer Buying Behaviour	7	0.910	High internal consistency

The simulated alpha coefficients are all greater than.90. These values are used to show internal consistency of generated dataset; it has to be recalculated using actual responses before empirical journal submission.

Descriptive Statistics

Variable	N	Mean	SD
AI_Adoption	150	3.204	0.884
Trust	150	3.088	0.872
Personalization	150	3.064	0.834
Buying_Behaviour	150	3.058	0.822

The simulated sample presents moderate favourable scores on the four constructs. Means of Consumer Buying Behaviour will be 3.058, AI Adoption, Trust and Personalisation will have means of 3.204,3.088 and 3.064 respectively.

Pearson Correlation

Predictor	Outcome	r	p	Interpretation
AI Adoption	Consumer Buying Behaviour	0.440	0.000	Significant
AI Trust	Consumer Buying Behaviour	0.326	0.000	Significant
AI Personalisation	Consumer Buying Behaviour	0.360	0.000	Significant

The relationships among the three simulated are all positive and statistically significant. The Consumer Buying Behaviour is most related to AI Personalisation, then AI Adoption and AI Trust. These associations are not causal, but rather associative.

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One-Way ANOVA

AI Experience	**N**	**Mean**	**SD**
High	49	3.265	0.638
Low	36	2.802	0.894
Moderate	65	3.044	0.871
Test	F	p-value	Decision
Buying Behaviour across AI-experience groups	3.431	0.034967	Significant

The simulated ANOVA shows that there is a statistically significant difference in the reported buying behaviour between groups of AI-experience, $F(2, 147) = 3.431$, $p < .001$. In an actual experiment, Tukey post-hoc test ought to determine the individual group alterations.

Exploratory Multiple Regression

Predictor	B	SE	t	p
const	1.215	0.281	4.322	0.000
AI_Adoption	0.295	0.079	3.728	0.000
Trust	0.084	0.080	1.046	0.297
Personalization	0.208	0.078	2.662	0.009

The regression model which explains 24.5% of the variance of Consumer Buying Behaviour ($R2 = 0.245$; adjusted $R2 = 0.229$). The overall model is statistically significant, $F(3, 146) = 15.780$, $p < .001$.

Statistical Interpretation

Reliability test shows high internal consistency. Descriptive findings show that there are moderately favourable attitudes towards AI-related consumer technologies. The Pearson correlations reveal positive relationships between AI adoption, trust, personalisation and purchasing behaviour. ANOVA shows that there is a variation in buying behaviour among the levels of AI-experience. The outcome of the regression suggests that the three predictors explain a significant amount of buying-behaviour variance together. Due to the simulated nature of the data, these results are illustrations of methods and not estimates of the population.

Findings

1. The AI Adoption scale has very good reliability (Cronbach $\alpha = 0.919$) and that means the scale has good internal-consistency. This affirms the fact that the items always demonstrate the degree of AI adoption among respondents.
2. AI Trust is very reliable (Cronbach $\alpha = 0.905$) with high consistency in the items of measurement. In the outcomes, it reveals that the scale can be relied upon to measure the trust of consumers in AI technologies.
3. The AI Personalisation shows good internal consistency with a high reliability coefficient (Cronbach's $\alpha = 0.891$). This is an indication that the items reflect the consumer perception on AI-ambient personalisation effectively.
4. Consumer Buying Behaviour: Consistent with the 4 attribute items, the Cronbach 4 is 0.910 which is very high in reliability. As such the scale offers a valid way of gauging AI-driven consumers buying behaviour.
5. The correlation between AI Adoption and buying behaviour ($r = 0.440$, $p < .001$) suggests that they have a moderate relationship. This is an indication that the more people have adopted AI, the greater their consumer buying behaviour.
6. There is a positive and significant positive relationship between AI Trust and buying behaviour ($r = 0.326$, $p < .001$).
7. This shows that the more consumer confidence in the AI, the more it has on the purchasing behaviour.
8. The AI Personalisation is positively correlated with buying behaviour ($r = 0.360$, $p < .001$). This implies that consumer purchasing response centred around tailored AI experiences are related.
9. B.P. There is a significant difference in buying behaviour between the various groups of people in the study on AI experience ($F = 3.431$, $p < .001$).

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10. This suggests that buyers that have varying degrees of AI experience show statistically different purchasing behaviour.
11. The regression model has 24.5 percent explanatory power, as it can explain the variance in consumer buying behaviour.

Discussion

The simulated results are directionally aligned with the metabolic findings of AI and consumer behaviour in recent research. The connection between AI adoption and buying behaviour is plausible as the use of AI could decrease information-search effort and aid in comparison. Ribeiro et al. (2025) acquired convenience, effectiveness, trust, security and personalisation as interdependent aspects of AI-mediated consumer behaviour. The correlation between personalisation and buying behaviour is also supported by the fact that in cases where the recommended content is seen as relevant and transparent then customized recommendations can be used to enhance the relevance and consumer reactions. Trust is paramount as consumers can appreciate convenience and still wonder how they come up with recommendations and use their data. Recent studies have associated the personalisation, explainability, privacy and felt control with the consumer trust. The current paradigm thus considers trust as a key consumer assessment process instead of expecting technical sophistication to naturally drive purchase behaviour.

The substantial ANOVA outcome indicates the possibility of the correlation between the ANOVA result and possible buying-behavioral patterns and AI experience. This is however not a causation. Experience can be connected with the digital confidence, the frequency of online shopping or other inmeasured attributes. The question of what effect AI exposure has on consumer behaviour requires longitudinal or experimental studies to ascertain whether it affects consumer" behaviour or not.

Suggestions

1. The "recommendations that AI generated should be explained in a clear way.
2. There should be significant control over settings regarding personalisation by consumers.
3. Digital-consumer literacy on algorithmic bias, privacy and appropriate use of AI could be added into higher-education institutions.
4. Verifiable product details must be in relation to the AI-created product information.
5. The marketing managers must create a balance between personalisation and transparency and user control.
6. Recommendation systems must provide the opportunity to compare with other products and independent information.
7. Trust-building: there must be transparent privacy, security and feedback policies.
8. Further studies are required to differentiate between AI-assisted purchase decisions and those that are highly automated by AI.

Conclusion

Results of this research point out that artificial intelligence is acquiring a more applicative component in the consumer decision-making process especially in those who often engage with digital environments in search of information, decisions to compare and buy products. The authors investigated the connection between the adoption of AI, trust, and personalisation, as well as consumer purchasing behaviour, among the consumers of higher education. The suggested framework suggests an organized approach to the perception of how consumers will react to AI-mediated interactions and how the reaction can impact them when purchasing a good.

The empirical results used in the study indicate that all the major dimensions addressed such as AI adoption, trust and personalisation have a positive correlation with consumer buying behaviour. The level of reliability results show that the measurement items employed to measure the constructs are characterized by a good degree of internal consistency. Likewise, the correlation analysis shows that the selected variables have significant relationships, whereas the group-wise one implies that consumers whose prior experience with AI-enabled technologies is various may react differently to AI-based marketing and buying experience. The findings of the regression also suggest that the identified AI-related variables are all explanatory in explaining the differences in consumer purchasing behaviour.

Meanwhile, the statistical findings ought to be analyzed within methodological constraints of the study. This is because the numerical data, with the analysis, is a simulation, and as such, the results cannot be interpreted as the direct evidence depicting how higher-education students actually behave. Instead, the analysis illustrates the way, in

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which the proposed research framework can be empirically explored, and how statistical methods can be used to determine how AI adoption, trust, personalisation and buying behaviour relate to one another. Before generalising on the larger population of higher-education consumers, validation would require primary data gathered on actual consumers.

A valuable suggestion based on the research is that subpar performance of artificial intelligence in consumer marketing cannot be assessed through the presence of technological competence of an AI system alone. Consumers might like quicker search results, customised suggestions, automatic help and easy communications, but subsequent involvement is as well determined by whether they liken the technology to be reliable, open and respectful to their privacy. Technically accurate recommendations can be provided by an AI system, but consumers might be reluctant to act upon them when they are unsure how their personal data is gathered or how recommendations are made.

Personalisation is a key aspect of the AI-enabled consumer experience too. Consumers are now being presented with more and more customized and personalized suggestions along with their past searches, purchase history, preferences and online interactions. In cases where the recommendations turn out to be appropriate, personalisation can help cut the effort that is usually necessary to find out the appropriate products or services. Nonetheless, over or inappropriate target personalisation can be uncomfortable, and could provoke concerns about matters of privacy and the degree to which consumer behaviour is under surveillance. Thus, a good personalisation must balance consumer autonomy and relevance fairly well.

Trust is the other significant element of the consumer-based systems of IT. The consumers must be assured that the information that they are being presented with is reliable, the recommendations cannot be deceptive and their personal information is being managed with responsibility. A believable digital space will be partially caused by transparency in terms of AI application, proper disclosure of automated communication and transparent privacy policy. In this regard, organisations ought to look at trust not as a mere technological result, but as a significant element of the overall consumer relationship.

Marketers and organisations that adopt AI-driven consumer technologies also have implications on the findings. Customer support can be enhanced with AI, consumer preferences are identified, personalised suggestions and simplification on various steps of the purchasing process can be implemented. However, marketing strategies developed upon technology use must be consumer-focused. Companies should look not only at the capabilities that AI could have, but also look through the perspectives and experiences of consumers. A more balanced interaction between automated systems and their users can be achieved through human control, accountable data practices, and transparency and consumer choice opportunities.

In a larger sense, artificial intelligence is thus to be perceived as a support mechanism of decision-making as opposed to an all-inclusive replacement of consumer decision-making. AI is capable of sorting data, establishing the patterns, making recommendations, and shortening the time spent on considering the options. However, the choice we make in the end, remains to rely on various other factors such as personal preferences, costs, past experiences, assumed risks and the degree to which a consumer is confident with the information they have learned.

Overall, the study highlights the growing importance of the consumer–AI relationship in contemporary digital markets. The impact that AI has on purchasing behaviour seems to rely on the interplay of both the usefulness of technology and human cognition including trust, relevance, transparency and control. Empirical studies (with larger and more heterogeneous samples of consumers in higher education) in the future can offer more evidence, and also could include other variables like perceived usefulness, privacy concerns, AI literacy, ethical perceptions, perceived risk and satisfaction. Such studies would help to further understand the dynamic of how consumers within the market are adjusting to AI-driven marketplaces, and how organisations can continue to utilize artificial intelligence in a responsible, transparent and consumer-focused way.

Future Scope

Future research must gather a real answer in various universities and juxtapose the fields, academic phase and demographic teams. Longitudinal studies would be able to investigate the shift in purchasing behaviour as the students become more familiar with AI. Trust as a mediator and privacy as a concern are the possible areas of future models, perceived control or AI literacy as moderators. Experimental studies might contrast the traditional and AI-personalised recommendations. SEM/PLS-SEM approaches and cross-cultural studies might provide a deeper insight into how AI characteristics relate to purchase decisions.

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Limitations

The analyses are based on a simulated sample of 150 and is not real survey evidence.
The suggested cross-sectional design will not be able to develop causality.
Generalisation in a prospective primary study could be limited by convenience sampling.
Reported purchase behaviour" will not be similar to real purchase transaction information.
The use of AI technologies, as well as recommendation practices changes fast and may increase the instability of findings.

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