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Examining Consumer Attitudes toward Personalised AI-Generated Product Recommendations among College Students

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ABSTRACT

Artificial Intelligence (AI) has significantly reshaped digital marketing, offering businesses innovative ways to boost customer engagement through personalised and automated suggestions. Drawing on the Technology Acceptance Model (Davis, 1989), this study examines how perceived usefulness and perceived ease of use influence users' acceptance of new technologies in the context of AI-driven individualised product recommendations. It also investigates the relationship between Attitude Toward Using AI (ATU) and Purchase Intention (PI) regarding AI-generated recommendations. Based on a sample of college students, the findings reveal a meaningful connection between ease of use and perceived value, as well as a positive relationship between users' attitudes toward AI and their intention to make purchases. These insights underscore the importance of user perception in shaping engagement and offer practical implications for marketing professionals, business strategists, and policymakers seeking to strengthen trust and optimise user experiences within AI-powered recommendation systems.

Keywords: *Artificial Intelligence, Perceived ease of use, attitude, purchase intention, product recommendation*

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INTRODUCTION

The influence and application of Artificial Intelligence in a marketplace are profound and are transforming the digital world. AI's implementation in recommendation systems is one of many examples in which personalised products can be offered to customers to enhance interaction and revenue generation. Algorithms that utilise comprehensive AI user-modelling based on user behaviour, preferences, and spending patterns generate these recommendation systems, offering personalised suggestions to each user. AI recommendation systems have transformed the way customers interact with e-commerce sites, social media, and online advertising platforms. On the other hand, businesses have to manage the perception customers have towards AI recommendations while AI systems continuously drive conversions and improve customer retention.

The usage of AI-generated recommendations is moderated by perceived effectiveness, trust, privacy concerns, ease of use, and purchase intent. While some consumers appreciate AI's thoughtful recommendations, a larger portion expresses great concern about user data privacy, algorithmic discrimination, and, as Buczak & Guven (2016) note, over-reliance on automated reasoning and decision-making capabilities.

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With the aim of understanding the attraction level of college students towards AI system usage, the study narrows down to the college students' population. The understanding that college students belong to a younger consumer demographic reveals that this cohort uses social media and video streaming platforms for shopping purposes, which marketing using AI technology aims for. Job satisfaction and marketing communications relationships can be maximised when understanding consumers' perspective towards AI-powered recommendation marketing systems. Also, the more the AI takes over control of so many elements of digital consumption, the more there is a need to understand the impact that such systems have on the freedom and decision-making ability of the consumer.

Even with the positive aspects of AI-powered recommendations, the lack of transparency in information remains one of the major obstacles to their acceptance and adoption at scale. The question most customers have is what exactly is being collected, stored, and utilised by the recommendation engines. Guidotti et al. (2018) argue that the black-box features of AI, combined with a lack of control over the offered recommendations, further fuel the scepticism that is likely to inform the consumer's choice relating to AI services. To address these issues, businesses have to deal with issues of open, ethical AI, and customer-centric approaches to their needs and data protection concerns.

Another element related to perceptions of AI suggestions deals with the gap between a high degree of involvement and a high degree of presumed intrusion. Personalised recommendations are said to enhance user experience by meeting the users' expectations, but at the same time, hyper-segmentation or incorrect segmentation can bring disenchantment and distrust. It is vital to strike this balance for any businesses trying to enhance AI-powered recommendation systems and retain customers at the same time.

Furthermore, the influence of AI suggestions on purchasing practices transcends personal concerns and touches on societal and psychological factors. For example, according to Bandura (1997) shoppers may experience something akin to a loss of self-efficacy, whereby they perceive important decisions as being made on their behalf by algorithmic systems. Likewise, Longoni et al. (2019) demonstrate that consumers' purchasing decisions may be significantly influenced by the perceived authority of the AI recommendations. In situations where there is perceived to be overly commercial bias in the recommendation, the recommendation loses its power and consumers abandon the platform or seek less biased information from other sources.

Considering the degree of confidence in AI and automated recommendations, or the effect automated single-user marketing has in a purchase decision, this study attempts to address the argument that seems to grow every day regarding the use of AI in consumer markets. Furthermore, it seeks to promote constructive approaches for businesses looking to improve the openness, control, and ethical use of AI to build trust and encourage youth participation for businesses

The use of AI in digital business is advancing rapidly, and as AI systems become more personalised, understanding consumer attitudes towards these systems becomes essential for trust and engagement. This research aims to understand the perceptions of college students, who are among the earliest adopters of technology, focusing on the factors driving AI acceptance and offering suggestions for harnessing the power of AI marketing tactics. This analysis seeks to enrich current knowledge concerning the impacts of AI on consumer choices while providing guidance on fostering recommendation systems that are efficient, ethical, and centred around the user's needs.

LITERATURE REVIEW

Attitude refers to the learned tendency to respond to a stimulus with favourable or unfavourable behaviour (Fishbein and Ajzen, 1975). More favourable attitudes increase the likelihood of performing the behaviour. Consequently, consumer attitudes play a critical role in shaping engagement with AI-driven marketing strategies.

Mohsin (2024) highlights how personalised AI recommendations in e-commerce significantly enhance user engagement and satisfaction by personalising content to an individual's preferences while focusing on the importance of transparency and customer control to build trust. Similarly, Chen et al. (2024) explored how

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consumer attitudes toward AI-generated advertisements are influenced by appeal types, self-efficacy, and the perceived social role of AI. This revealed that there are different shades that interplay to underline the adaptability of AI in catering to the many preferences (Joshi et al., 2023).

Wortel et al. (2024) examine AI disclosure messages in Instagram ads, finding that transparency about AI involvement can reduce advertising attitudes and brand perceptions among consumers with high AI aversion. Ratta et al. (2024) compare human- and AI-generated advertising, demonstrating that AI-generated content enhances creativity, influences buying behaviour, and effectively addresses human emotions, providing a competitive advantage in marketing.

Park and Ahn (2024) investigate generative AI-created visuals in luxury fashion, showing that such content strengthens consumer-brand connections and boosts purchase intentions, especially among younger audiences. Kumar et al. (2024) analysed Indian social media users' attitudes toward AI-enabled advertising, using the Technology Acceptance Model (TAM) (Venkatesh & Davis, 2000) with "Perceived Trustworthiness" as an added construct, and revealed that trust significantly enhances positive attitudes and purchase intentions.

Finally, Eickhoff and Zhevak (2023) emphasise that perceived similarity and observability of AI-driven marketing strategies strongly influence consumer perceptions, offering practical insights for matching AI initiatives with consumer needs. Together, these studies underscore the growing potential of AI personalisation and transparency in shaping consumer attitudes and behaviours across various contexts.

RESEARCH METHODOLOGY

Research Gap

College students, who are the major consumers of tailored recommendations on social media and e-commerce sites, are not the subject of the majority of research on AI-driven personalisation in marketing. Furthermore, while research has examined AI in domains such as luxury branding and e-commerce, little is known about how these tactics function on platforms popular with younger generations. There are two ethical considerations that are frequently overlooked - trust and transparency. Especially when it comes to how they affect younger generations' opinions of AI-generated recommendations. Although research has shown that AI can increase engagement on e-commerce websites, it hasn't delved deeply into how it influences college students' purchase intentions and overall satisfaction. Lastly, a large portion of the research is theoretical and does not provide useful guidance for companies seeking to use AI-driven marketing to reach college students.

Research Objectives

The research has the following objectives:

- To explore the correlation between Attitude Towards Using AI (ATU) and Purchase Intention (PI) for AI-recommended suggestions.
- To examine how Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) impact the acceptance of AI-based personalised product suggestions among college students.

Research Hypotheses

Hypothesis 1: There is a significant positive relationship between Attitude Toward Using AI (ATU) and Purchase Intention (PI) for AI-generated recommendations among college students.

Hypothesis 2: There is a significant relationship between Perceived Ease of Use (PEOU) and Perceived Usefulness (PU) of AI-driven personalised product recommendations among college students.

Research Design

The study adopts a quantitative research design, utilising a survey-based approach to assess the attitudes of college students toward AI-generated product recommendations. The study employs a mix of descriptive and causal

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designs since we have tested a hypothesis. It performs descriptive analysis on the sample and performs regression analysis, as well as correlational analysis

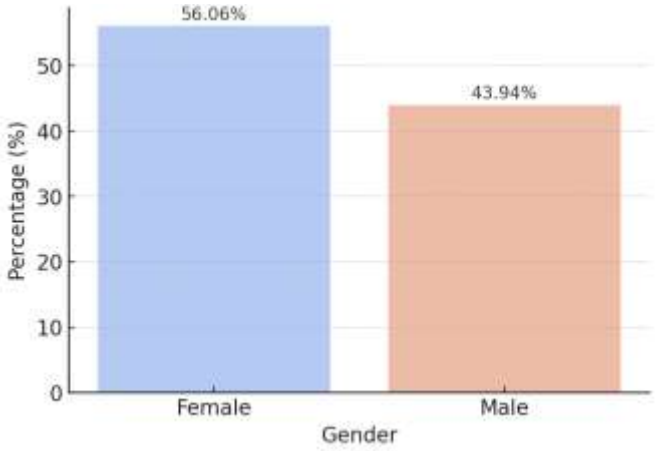
Sources of Data

Primary data was collected through a survey prepared using Google Forms. The questions followed a five-point Likert-type scale. Subjective questions were also included to explore diverse perspectives. We used email, social media platforms (e.g., WhatsApp, Instagram, Facebook), and direct messaging to distribute the survey.

Sampling

The research focuses on college students aged 18-26 who frequently shop online and encounter personalised AI-driven product recommendations, as well as those who do not, in order to gauge contrasting attitudes towards AI-generated product recommendations. We chose this demographic because of their familiarity with technology and online shopping, which makes them likely to have strong opinions about such recommendations. Convenience sampling was used due to time and resource constraints. We contacted participants through social networks like WhatsApp and Instagram, and we also forwarded the questionnaire to our classmates.

The sample consisted of 66 participants. The majority of respondents were between 18-21 years old, aligning with the target population of college students. 56.06% of the sample consisted of females, whereas 43.94% consisted of males. Though students from the psychology department constituted 21.21% of the total sample, there were participants from medical science, agriculture as well as life sciences departments. 48.48% of the participants were second-year college students. The income distribution of respondents reveals that the largest group (31.82%) comes from households earning above ₹10,00,000 annually, making it the most represented income bracket. Following this, 27.27% of respondents fall within the ₹5,00,000 - ₹10,00,000 range. A smaller portion, 16.67%, comes from families earning ₹2,50,000 - ₹5,00,000, while 12.12% of respondents belong to the ₹1,00,000 - ₹2,50,000 income category. Another 12.12% come from households earning below ₹1,00,000 per year. These insights indicate that the majority of participants come from middle- to high-income backgrounds.



Source: Primary data collected through survey

Figure 1: *Gender Distribution*

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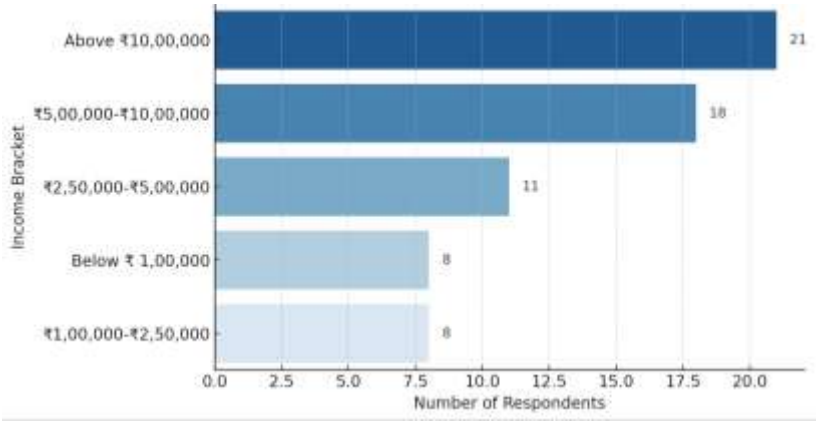

Source: Primary data collected through survey

Figure 2: *Income Distribution*

Statistical Techniques

- Regression Analysis was used to examine the relationship between PU and PEOU.
- Correlation Analysis was used to measure the relationship between ATU and PI.
- Microsoft Excel was used for the statistical computation.

FINDINGS AND DISCUSSIONS

Regression Analysis

A regression analysis was done to calculate and determine the influence of Perceived Ease of Use (PEOU) on Perceived Usefulness (PU) of AI recommendations.

- R^2 value = 0.408117
- This means 40.81% of the variance in Perceived Usefulness can be explained by Perceived Ease of Use.
- Interpretation:
- As AI-generated recommendations become easier to use, students perceive them as useful.
- AI interfaces that are user-friendly improve the acceptance of and engagement by student users.

Table 1: *Regression Statistics*

Multiple R	0.63884
R square	0.408117
Adjusted R-square	0.39332
Standard Error	2.885205
Observations	42

Table 2: *ANOVA*

	df	***SS***	***MS***	***F***	**Significance F**
Regression	1	229.5951	229.5951	27.58094	5.29E-06
Residual	40	332.9764	8.324409		
Total	41	562.5714			

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Table 3: *Intercept and variable*

	Coefficient	*Std Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	3.93643	2.099972	1.874515	0.068175	-0.30777	8.180632
Perceived Usefulness	0.748215	0.142469	5.251756	5.29E-06	0.460273	1.03656

Correlation Analysis

A correlation analysis was done to assess the relationship between Attitude Toward AI (ATU) and Purchase Intention (PI).

- Correlation coefficient = 0.443594
- This indicates a moderate positive relationship between Attitude Toward AI and Purchase Intention.
- Interpretation

- Students with an existing favourable attitude toward AI-generated recommendations are moderately more likely to act on them and purchase the product.
- Since the correlation is only moderate, it means that other factors like trust, fairness, and perceived ethical conduct of AI systems, as highlighted by Mittelstadt et al. (2016), also play a role in influencing students' purchase decisions.

With respect to the analysis, both hypotheses are accepted.

Discussion

Our research report finds that Perceived Ease of Use (PEOU) is important for the Perceived Usefulness (PU) of AI recommendations. If a system of interaction with an AI is uncomplicated, students are more willing to accept and interact with the AI recommendation. This corresponds to the literature we reviewed, which states that when there is ease of use, perceived usefulness increases, which consequently facilitates adoption.

The moderate correlation (0.44) of Attitude Toward AI (ATU) and Purchase Intention (PI) is suggestive of the fact that a positive attitude does allow for AI-initiated purchases to occur, but certainly other factors, such as trust and ethics, as well as brand equity and product relevance, matter. Thus, this implies that the AI-purchase link can be strengthened with an increasing focus on AI transparency and consumer control.

Furthermore, businesses can focus on:

- Increasing the level of trust in AI and transparency about the system to the consumers.
- Allowing users to change AI suggestions as per their liking so that they can enjoy a better user experience.
- Addressing the issue of negative attitudes towards AI in relation to privacy concerns using marketing.

RECOMMENDATIONS

Ensuring Transparency in AI Recommendations

Most customers are concerned that AI recommendations may overstep their boundaries without providing context for how they have arrived at those recommendations, and may not be accurate. A good number of customers remain doubtful as to whether the AI-based recommendations are personalised or if they are simply profiting from bulk advertisement. In order to foster confidence, businesses should:

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- Prominently state the integration of AI technology in the recommendation engines where it is clear that recommendations do not just pop-up as suggestions for browsing history, purchases and behaviour, but there is an AI doing the recommendations.
- Enable explainability options where consumers are able to understand the reasoning behind a product recommendation, and AI's reasoning is no longer a discovery.
- Adhere to recommended ethical use of AI by not utilising hostile marketing approaches and attending to consumers' needs first.

Improving User Engagement by Customising AI Automation Suggestions

AI recommendations are appealing to users who feel that their needs are being considered. Rigid structures fail to satisfy everyone since each individual's tastes and buying patterns differ greatly. Here are some simplifications businesses could make:

- Custom filters: Users should be able to adjust AI suggestions according to specific interests, brands, or spending patterns.
- Enable/disable options: Users should be allowed to turn ON or OFF AI suggestions so that they do not feel imposed during their shopping experience.
- Rating suggestions: Consider including a mechanism for users to rate suggestions and for the AI to keep track of these ratings, thus improving over time.

Data Ethics, Privacy, and Security Frameworks

Issues surrounding customers' personal data and security remain a major barrier to the adoption of AI in the business world. The use of AI systems in marketing raises high expectations for personal data security. Businesses need to ensure that AI marketing does the following:

- Adhere to user terms and privacy policies such as GDPR or CCPA that prevent the infringement of user information.
- Provide clear notice to users about what data will be gathered and obtain their consent before any attempt is made to monitor their behaviour in order to form recommendations.
- Avoid unreasonably exposing consumer information to outside breach and legally defend the claim by employing high-level security measures that ensure data integrity.

The Need for More Analysis on Trust and Ethics in Marketing AI

Having looked into the correlation between one's ease, its helpfulness, user's attitude, and their purchasingactions, further investigation is required in concepts surrounding trust, ethics, and AI explainability and how these factors affect consumer choices. Future research should focus on:

- The extent to which AI recommends being partially transparent would affect consumer trust and engagement with their services.
- AI's ethical conduct for supporting sceptical consumers of automatically executed marketing systems.
- Ethnic and cultural variations in relation to their confidence in AI and its relevance in different social and geographical groups.

CONCLUSION

The results of the study reinforce the importance of college students' Perceived Ease of Use (PEOU) as a key influencer of the Perceived Usefulness (PU) of AI-driven personalized recommendations. According to the

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regression analysis, as AI-powered recommendations become easier and more intuitive to use, students tend to show greater appreciation and perceive greater benefits from them.

Moreover, the study found a moderate positive relationship between Attitude Toward AI (ATU) and Purchase Intention (PI), suggesting that consumers with a positive attitude toward AI recommendations are more likely to develop stronger purchase intentions. Nevertheless, while attitude does influence purchasing behaviour, it cannot single-handedly determine it. Other determinants—such as the trustworthiness of the AI, the brand's reputation, and the privacy of the data provided—play a crucial role in shaping consumer decisions.

Considering this, AI recommendations represent an excellent approach for business growth. However, companies must recognise that simply developing technology is not enough. Increasing AI usage in marketing should also emphasise trust, transparency, and ethics to attract more consumers. If these issues are neglected, businesses will struggle to gain market attention and will need to work harder to build credibility and experience.

AUTHOR DECLARATIONS

CRediT Author Statement / Author contributions

Minal Bhagat contributed equally to conceptualisation, methodology design, data analysis, and manuscript preparation.

Vanini Bharadwaj contributed equally to conceptualisation, methodology design, data analysis, and manuscript preparation.

Shambhawi Sahoo contributed equally to conceptualisation, methodology design, data analysis, and manuscript preparation.

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