Examining Consumer Attitudes toward Personalized 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 personalized and automated suggestions. This study explores how Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) influence college students' acceptance of AI-driven individualized 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 optimize user experiences within AI-powered recommendation systems.

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

INTRODUCTION

The influence and application of Artificial Intelligence in a marketplace are profound and transforming the digital world. AI's implementation in recommendation systems is one of the many examples, whereby offering personalized products to customers to enhance interaction and revenue generation is possible. Algorithms that utilize comprehensive AI user-modeling based on user behaviour, preferences, and spending patterns generate these recommendation systems, offering personalized 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 express great concern over user's data privacy, algorithmic discrimination, and reliance on automation reasoning and decision-making capabilities.

With the aim of understanding the attraction level of college students towards AI system usages, the study narrows down to the college students' population. The understanding that college students belong to a younger conusmer demographic reveals this cohort uses social media and videos streaming platforms for shopping purposes, which marketing using AI technology aims for. Job satisfaction and marketing communications relationships can be maximized 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 information transparency remains one of the major obstacles to acceptance of adoption at scale. The question most customers have is what exactly

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is being collected, stored, and utilized by the recommendation engines. The black-box features of AI, combined with lack of control over the offered recommendations, further fuels the skepticism which 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 high degree of involvement and high degree of presumed intrusion. Personalized 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 contributed by AI suggestions on purchasing practices transcends personal concern and touches on societal and psychological factors. For example, shoppers may experience something akin to a loss of self-efficacy, where they feel an important decision is made for them and being handed over to Artificial intelligence. Likewise, the consumer's decision to buy the products is significantly influenced by the authority of the AI recommendations. In situations where there is perceived overly commercial bias in the recommendation, the recommendation looses 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 have 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 personalized, understanding consumer attitudes towards these systems becomes essential for trust and engagement. This research attempts to understand the perceptions of college students, who are one of the earliest adopters of technology, focusing on the causes of AI acceptance while offering suggestions to harness 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 centered around the user's needs.

LITERATURE REVIEW

Attitude refers to the learned tendency to respond to a stimulus with favourable or unfavourable behaviour. A more favourable attitude towards a behaviour leads to an increase in that behaviour (Fishbein and Ajzen, 1975). Therefore, consumer attitudes play a critical role in shaping engagement with AI-driven marketing strategies.

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

Wortel et al. (2024) examines 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) compares 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) analyzed Indian social media users' attitudes toward AI-enabled advertising, using the

Technology Acceptance Model (TAM) with "Perceived Trustworthiness" as an added construct, and revealed that trust significantly enhances positive attitudes and purchase intentions.

Finally, Eickhoff and Zhevak (2023) emphasize 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 personalization 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 personalization in marketing. Furthermore, while research has talked about AI in domains like luxury branding and e-commerce, not much is explored about how these tactics function on platforms that are popular with the younger generation. There are two ethical considerations that are frequently overlooked - trust and transparency. Especially when it comes to how they affect the opinions of younger generations regarding the AI-generated recommendations. Although research has shown that AI can increase engagement on the e-commerce websites, it doesn't delve deep into how it influences college student's intentions to make purchases and their level of satisfaction in general. Lastly, a large portion of the research is theoretical in nature and does not provide useful guidance for companies wishing 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 personalized 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 personalized product recommendations among college students.

Research Design

The study adopts a quantitative research design, utilizing 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 design 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 personalized 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.
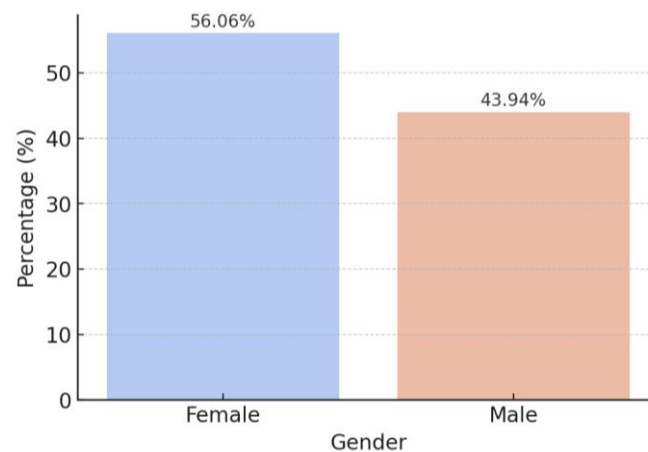
Source: Primary data collected through survey

Figure 1: Gender Distribution
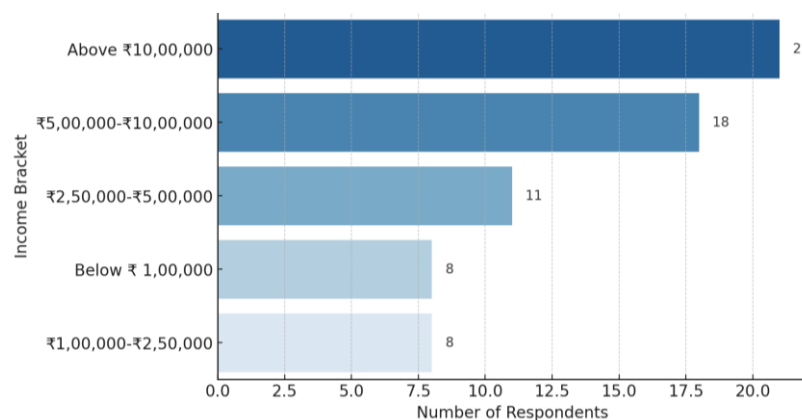
Source: Primary data collected through survey

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 Percieved 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			

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 favorable 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, product relevance, brand name, etc have a role in influencing the student's purchase decisions.

With respect to the analysis, both hypotheses are accepted.

Discussion

The findings from our research report point out the importance of Perceived Ease of Use (PEOU) when it comes to 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.

CONCLUSION

The results in the study reinforce the importance of the college student's Perceived Ease of Use (PEOU) as an influencer of the AI-driven personalized recommendations' Perceived Usefulness (PU). As per the regression analysis, when the consumption of AI powered recommendations becomes easier and more intuitive, there tends to be a higher level of appreciation and benefit obtained from them.

Moreover, the study also established a moderate positive relationship between Attitude Toward AI (ATU) and Purchase Intention (PI) suggesting that, consumers that have a positive attitude towards the AI recommendations tend to have a positive intention towards purchasing. Nevertheless, while attitude does impact the purchase, it cannot single handedly determine it as a behaviour, therefore other determinants such as the trust, credibility of the AI, the brand's reputation and privacy of data provided help in making decisions by the consumers.

Considering this, AI recommendations are an excellent approach for doing business but the companies should understand that just developing technology is not enough. Increasing AI usage in marketing should also focus in putting more effort on the concept of trust, transparency, and ethics in order to draw more consumers. If these companies do not take care of these issues, they will need to work hard to gain attention on the market and experience.

Recommendations

Ensure Transparency in AI Recommendations by Outlining the Involvement of AI in the Processes.

Most customers are concerned AI recommends overstep their boundaries without providing context as to how they have accomplished this and may not be accurate. A good amount of customers remain doubtful as to whether the AI-based recommendations is personalized or if they are simply profiting out of bulk advertisement. In order to foster confidence, businesses should:

- 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 utilizing hostile marketing approaches and attending to consumers' needs first.

Improving User Engagement by Customizing 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.

Analyze how data ethics can shape contours of privacy and redesign the security frameworks.

Issues surrounding customers' personal data and security remain a major barrier when it comes to employing AI in the business world. Use of AI systems in marketing comes with huge expectations when it comes to personal data security. Businesses need to ensure that AI marketing do 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 to Consumers

Having looked into the correlation between one's ease, its helpfulness, user's attitude, and their purchasing actions, 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 skeptical 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.

With technology fuelled AI recommendations shifting the landscape of digital marketing, companies need to find a balance between novel tech adoption and ethical accountability. AI should not be used solely for making algorithm-driven recommendations, but also rest assurance that transparency, consumer control, and AI ethics are liveable principles. If these matters are taken care of along with the guidance received, and achievable friendly AI systems for consumers will stimulate involvement, loyalty, and thereby sustain business development.

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