



RESEARCH ARTICLE

The Relationship Between Artificial Intelligence and Consumer Decision Making in the Context of Personalized Cosmetic Products

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Abstract

Artificial intelligence, or AI, creates entirely new dimensions in combining consumer experiences via personal marketing instruments. This objective of the study is to explore the causal relationship between AI-based personalization and consumer behavior within the cosmetics sector. Further, the investigation looks into how AI acceptance and effectiveness in influencing purchase behaviour are dependent on factors such as digital literacy, demographic attributes, and trust. This study used a quantitative method with structured questionnaires, targeting women in Pune who have interacted with AI-based beauty applications. Data were analyzed on SPSS software by applying descriptive statistics, Cronbach's Alpha for reliability, regression analysis, and ANOVA testing. The findings indicated a significant influence of AI personalization on consumer purchasing intent and trust. Digital literacy and ease of use were crucial for consumer engagement. Ethical and data privacy concerns were some of the barriers to hasty AI acceptance. The tendency of the cosmetic company to encourage and provide customer satisfaction and loyalty in a digital marketplace would be with transparency about ethical artificial intelligence use and user-centric personalization strategies.

Keywords: Artificial Intelligence, Consumer Decision-Making, Personalized Marketing, Cosmetic Industry, Digital Literacy, Consumer Trust, Consumer Preferences.

Introduction

The introduction of Artificial Intelligence (AI) incorporated into beauty service-focused augmented reality (AR) and virtual reality (VR) technologies includes features such as virtual try-ons and personalized advice (Chakraborty *et al.*,

2024). These innovations improve customer satisfaction by managing expectations, resulting in actual outcomes rather than unattainable fantasies or fantasies that could not be real (Grech *et al.*, 2024). AI applications in the beauty industry include smart mirrors and skin analysis tools, inventory management, and supply chain optimization. Technology also enables sustainable product development and enhances new business models (Gasenko, 2024). Moreover, challenges like data privacy concerns, biases, and the possibility of encouraging unrealistic beauty standards are yet to be addressed. Yet AI is still a path towards growth and innovation in the beauty industry (Hegde *et al.*, 2023).

Personalized beauty products and services make a world of difference to a customer's experience and loyalty. Personalization in retail websites improves the playful customer experience while leading to attention being directed towards one or two products (Lambillotte *et al.*, 2022). These personalized services enhance customer satisfaction in beauty-living commerce. Face feature recognition technology has made it possible to recommend makeup based on an individual's features, thereby adding to the user experience of cosmetics applications (Chiocchia & Rau, 2021). The role of customer experience in brand attachment and trust, both of which lead to customer

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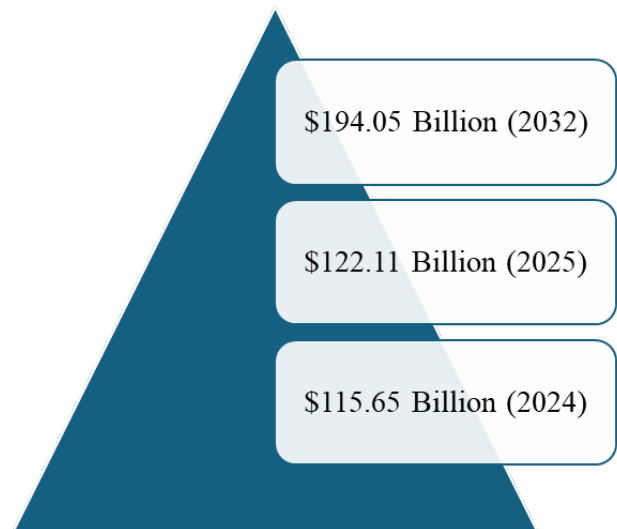
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loyalty, is essential in beauty clinics (Sari and Wijaya, 2019). Customer satisfaction, engagement, and loyalty increased significantly with the personalization of beauty products and services through digital, live commerce, or in-person experiences. Beauty businesses can ensure more meaningful and enjoyable customer experiences by personalizing their offerings to individual preferences and needs. Furthermore, AI technologies also exert much influence on e-commerce. AI-driven computer agents are improving accuracy in product selection, enhancing user satisfaction, providing engagement for the online buyer, and building trust-i.e., they are making the sale (Raheja & Darji, 2024). The lucrative use of the integrated approach applying AI and AR in personalized recommendations develops a positive influence on customer usage intention, particularly in the cosmetic sector (Adawiyah *et al.*, 2024). Such tools as chatbots and virtual try-ons, as well as e-WOM, are forecasters of consumer attitudes and continuous intentions toward the use of e-commerce platforms (Tandon, 2023).

The rapid advancement of AI-powered personalization in marketing has surged ahead of research into its effects on consumers' purchasing behavior. The effects of recommending products by artificial intelligence on user experience and engagement are well known; there is little evidence from research on how this affects purchases. Moreover, consumer trust is paramount; users may have doubts about the decision-making of an AI. These considerations are hampered by data privacy issues, where consumers feel that the personal data they provide might be misused or accessed without their consent. In addition, the perceived AI reliability can affect consumer acceptance due to inaccurate and intrusive AI recommendations, which may end users unwilling to use the technology. These gaps need empirical studies to investigate the role of AI in the shaping of purchasing behaviour, trust, and ethical issues in consumerization while building a case for ensuring that personalization aligns with transparency and privacy criteria.

This study focuses specifically on AI-powered beauty brands such as Sephora, L'Oréal, Nykaa, and MAC Cosmetics that interact with AI-driven recommendation systems to enhance customer experience. It examines consumers' interactions with these AI-based personalization tools used for cosmetics selection in terms of their purchasing behavior, trust, and satisfaction. The study focuses on those kinds of consumers who use AI-powered recommendations, such as virtual try-on tools, skin analysis applications, and personalized product suggestions. In terms of empirical validation, empirical SPSS statistical modeling is employed to examine consumer responses that help cut across the major trends and associations from AI personalization to consumer decision-making. The purpose of this study is to investigate whether AI can realistically affect a customer's buying behaviour within the beauty sector while mapping out possible trust-privacy-reliability concerns related



Source: <https://www.cmarix.com/blog/ai-in-skincare-future-trends/#:~:text=The%20app%20suggests%20a%20tailored%20skincare%20routine,description%20of%20the%20ingredients%20of%20Neutrogena%20products>

Figure 1: Market Growth (2024–2032) of AI-Driven Personalized Cosmetic Products

thereto. The first section of the paper describes the introduction of the study. The second section will include the review of literature, the methodology will occupy the third section, and results will then be presented in the fourth section while the rest of the discussion and conclusion will be presented in the remaining chapters.

Literature Review

Theoretical framework

- *Technology acceptance model (TAM)*

The Technology Acceptance Model proposed in 1989 includes perceived usefulness (PU) and perceived ease of use (PEU) as the most important determinants of technology adoption. AI usually refers to whatever value the user receives from it concerning productivity and input to decision making. If an AI makes tasks easier, boosts efficiency, and gives reliable insights, users are more likely to accept it. PEU is the ease of interacting with the AI system. AI proliferates in the market through an intuitive interface, a low learning curve, and seamless integration with existing workflows. When AI is both useful and easy to learn, users will have a positive disposition toward it, consequently reducing resistance to its acceptance. However, if the complexity of AI does not indicate straightforward benefits, the adoption will likely slow down. Organizations can help in improving AI acceptance through improved usability, training, and demonstrating real benefits so that the PU and PEU are highly maximized for open adoption. (Na *et al.*, 2022).

- *Consumer decision-making model*

The consumer decision-making model, introduced by John Dewey (1910), is about how the consumer makes purchase decisions. When purchases are made with the help of AI, psychological aspects like trust, perceived risk, and emotional responses become very important. Consumers are inclined to embrace AI suggestions that have been developed with trust in technology and confidence in its accuracy. Personalized experiences, favorable comments, and openness in AI decision-making add to the strength of the trust. AI-based buying is behavioral influenced by different factors like habits, social, and convenience. Consumers often lean on AI when it helps them in their choices, fits their choices, and feels fluid for use but can be present when AI might be intrusive or impersonal. Transparency and addressing consumer concerns while creating user experiences that help customers transact more intuitively, reliably, and engagingly are keys to AI adoption for all organizations (Song & Lin, 2023).

- *AI in the personalized beauty industry*

The study addressed various obstacles and applications of ethical AI, especially in the domains of personalized recommendation systems and consumer privacy. Prajapati (2025) has outlined major AI ethical challenges, in particular, bias, accountability, and transparency, that remain pertinent through the years. In addition, Sargiotis (2024) dealt with some ethical issues, which have illustrated the concepts of bias reduction, privacy enhancement, and responsible AI. An inquiry by Adanyin (2024) into the ethics of AI in the retail frontier found that privacy and fairness stakes in the understanding of consumers were based more on data issues and processes of decision-making. A virtual cosmetics recommender system built by Abu-Shanab *et al.*, (2023) adopted pre-trained computer vision paradigms conducive to accurate product suggestions. Marelli *et al.*, (2022), on the other hand, implemented an AI-powered virtual try-on web application that made it possible for users to visualize the product as they applied it, increasing satisfaction. Kavitha *et al.*, (2023) suggested an AI system for cosmetic recommendations based on skin conditions, making clear the efficacy of AI in dermatological analysis. Li *et al.*, (2020) presented a personalized skincare recommendation engine based on machine learning, which optimized its product recommendations based on assessments of the skin profiles of its users.

Ahsan *et al.* (2023) have proposed a predictive analytics system called PAPQ that can be used for product quality in Industry 4.0. The AI-driven monitoring-based predictive system ensures that products meet the high expectations for quality production. These studies emphasized the role AI plays in personalized recommendations and analysis of product quality, while also addressing ethical issues such as bias, fairness, and transparency. While the integration

of AI in retail and skin care has demonstrated considerable prospects for enhancing consumer experiences, ethical challenges continued to weigh heavily.

Consumer Trust and AI Acceptance

There is a whole bunch of other literature that talks about the roles of AI in personalized marketing, consumer behavior, and ethical implications. Alijoyo *et al.*, (2025) have uncovered all of how AI can affect personalized marketing, focusing on how this brings segmentation and targeted advertising to the culturally conscious level. An analysis of AI consumer perspectives on personalization in social media engagements was conducted by Teepapal (2025), with results that reveal AI power recommendations created an impact on user interaction. It was the said study by Pagala *et al.*, (2024) that examined the relationship between personalized marketing and data analytics in consumer purchasing decisions, with AI means heightening customer loyalty and purchase confidence. According to Kanapathipillai *et al.*, (2024), AI-supported personalization in e-commerce serves the purpose of developing trust and convenience, and enhancing service quality, especially in the context of the Malaysian market. Dewanthi *et al.*, (2024) explored the dual nature of AI recommendations, focusing on their advantages in personalization versus concerns about privacy concerning consumer trust.

Chen *et al.*, (2023) examined the analytical reactions of consumers to explainable AI recommendations and found that post hoc explanations made the user's trust and acceptance of suggestions by AI more significant. The human and AI recommenders were compared by Wien and Peluso (2021) showing that people's preferences associated with products significantly varied as a function of cognitive processes. AI had the edge over humans in such specific contexts. Shin (2020) assessed users' perspectives on algorithmic decision-making in AI personalization, with a particular emphasis on elements of fairness, accountabilities, transparency, and/or explainability that could affect trustworthiness. Collectively, these studies demonstrated AI's increasing relevance in personalized marketing and consumer engagement, showcasing how AI enhances recommendation and user experience. However, the ethical considerations of transparency, fairness, and privacy nonetheless remained critical challenges requiring weighted AI implementation strategies.

Research Gap and Hypothesis Development

The study on AI-based beauty recommendations has mostly been achieved through innovation, precision, and personalization. However, few studies are focused on consumer behavior, particularly trust, acceptance, and decision-making. With the advent of AI-powered recommendation systems in online retail platforms, there are still very few studies exploring how consumers perceive

and interact with these recommendations. While existing studies focused on the role of AI in enhancing product recommendations & virtual try-on experiences, minimal research has explored the considerations of consumer skepticism, privacy issues, and ethical issues. Moreover, the effects of the AI-generated recommendation system on consumers' long-term loyalty and purchase behavior have not yet been thoroughly investigated. Filling these gaps is necessary for the design of AI models that meet consumer demands in terms of their expectations for transparency and trust in AI-based cosmetic retail experiences. Various Hypotheses have been outlined to fill the identified gaps with greater knowledge with respect to the study. These hypotheses seek to fill the existing gaps by addressing key salient factors influencing consumer behavior. The following are some of the hypotheses formed in this regard:

- "There is a significant impact of Brand image, Price, and Availability on the decision-making of the consumers."
- "There is a significant impact of AI-based marketing strategies on shaping consumer preferences and influencing decision-making in the selection of cosmetic products."
- "Demographic factors significantly influence consumer preferences in the selection of cosmetic products."

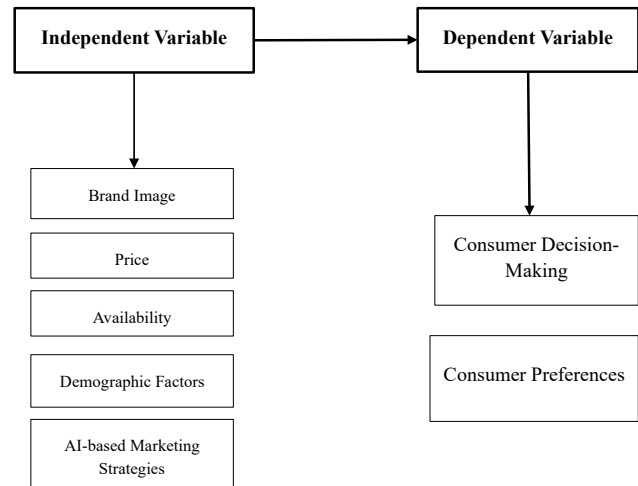
Research Objectives

- "To study the joint impact of Brand image, Price, and Availability on the decision-making of the consumers."
- "To evaluate the influence of AI-based marketing strategies on shaping consumer preferences and influencing decision-making in the selection of cosmetic products."
- "To examine how demographic factors influence consumer preferences in the selection of cosmetic products."

Conceptual Framework

A conceptual framework is a structure that explains the key variables in a research study and how they relate to one another. Hence, with it come understanding and clarity as to what exactly is being studied, why it is being studied, and what the expected results are.

The conceptual framework shows the five key independent variables-brand image, price, availability, demographic factors, and AI-based marketing strategies influencing the two dependent variables of consumer decision making and consumer preferences. It explains how the independent variables affect the consumer decision-making process and preference while choosing among cosmetic products. Brand Image builds a perception, Price determines affordability, and Availability acts as a conduit for product procurement, while Demographic Factors measure consumer behaviour variation among different segments of the population. AI-based Marketing Strategies take



Source: Self-prepared by Author

Figure 2: Conceptual Framework

personalisation a step higher, actively shaping the Consumer Decision-Making and Consumer Preference.

Research Methodology

Research Design

This study employed a quantitative research design to analyse the data systematically. A structured mechanism was followed for the collection and interpretation of numerical data. This design was conceived with deliberate attention to the factors involved in the consumer's decision-making process.

Target population

The targeted population for the study comprised the women consumers of the Pune region. Data from this population has been collected to assess their purchasing behavior. The study attempted to analyze their preferences and the factors affecting their decision-making.

Sample size

The sample size was determined using the Cochran formula. Formula to calculate the sample size for the study is:

$$n = \frac{z^2}{4e^2}$$

"Where n = Sample size"

" e = the desired level of precision (i.e., the margin of error)
 z represents the Z-value (1.96 for 95% confidence level)"

Therefore, the above formula gives a sample size of 385. However, a larger sample is considered for increased reliability for this study since the population has not been defined. A total of 450 questionnaires were distributed to the women consumers in the Pune region. From the responses that were received, 50 were found to be either wrong or

incompletely filled. Hence, the final sample size destined for the study included 400 women consumers from the Pune region.

Data Collection Method

This study collected data from primary sources to provide firsthand information. Questionnaires were used to solicit relevant responses from the participants. This method offered direct insight into consumer decision-making elements.

Survey instrument

The data were collected using a structured questionnaire that was made to gather relevant information systematically from respondents. The questionnaire possibly enabled quantitative analysis of the factors influencing consumers' decision-making.

Sampling method

The study selected purposive sampling to select women consumers of the Pune area. It is because only those who were concerned and possessed the attributes needed were selected to study subjects, thereby making it possible to perform more in-depth, incisive observations.

Variables and Hypothesis Testing

- *Independent variables (IVs)*

The study focused on brand image, price, and availability as independent variables influencing consumer choices, while also considering AI-enabled marketing strategies to impact consumer preferences. Lastly, demographic factors that shape purchasing behavior were also analyzed.

- *Dependent Variables (DVs):*

The study regarded consumer decision-making and preferences regarding cosmetic product selection as some dependent variables. These variables were evaluated for their possible effects on purchase behavior. The research aimed to investigate how several factors may influence consumer choice.

Data Analysis Techniques

Statistical tools

The data was explored and analyzed for validity using statistical tools to ensure the reliability and accuracy thereof. Data was organized and processed using MS Excel, while the analysis took place with the aid of SPSS for advanced statistical techniques. Thus, they could provide meaningful interpretations and insights.

Statistical techniques

The study applied a variety of statistical techniques in data analysis. Regression analysis was performed to understand the relationships between variables, whereas MANOVA was applied for the assessment of differences across several

dependent variables. ANCOVA was further used in this study to control covariates and assess their effects.

Results

Table 1 shows the demographic profiles of the respondents, based on age most of the respondents aged between 20 - below 30 years, which is 43.8%, followed by respondents aged between 30 - below 40 years, which is 30.5%, followed by the respondents aged 50 and above, which is 16.3%, lastly followed by respondents aged between 40 - below 50 years, which is 9.5%. Based on education majority of respondents are bachelor's degree holders, which is 41.3%, followed by the respondents who have completed higher secondary education, which is 23.5%, followed by the respondents who are doctoral/professional degree holders, which is 19.0%, lastly followed by the respondents who are master's degree holders, which is 16.3%. Based on occupation most of the respondents are students, which is 22.5%, followed by the respondents who are self-employed (21.0%) and employed in private sector (21.0%), followed by the respondents who are working other than these, which is 16.0%, followed by the respondents who are home makers, which is 13.5%, lastly followed by the respondents who are employed in government sectors, which is 06.0%.

Based on family monthly income most of the respondents family income falls between Rs. 50,001 - Rs. 1,00,000, which is 40.8%, followed by the respondents their family income is below Rs 50, 000, which is 28.0%, followed by the respondents their family income falls between Rs. 1,00,001 - Rs. 1,50,000, which is 12.8%, followed by the respondents whose family income is Rs. 2,00,001 and above, which is 11.0%, lastly followed by the respondents their family income is between Rs. 1,50,001 - Rs. 2,00,000. Based on marital status, most of the respondents are married, which is 65.0%, followed by the un- married respondents, which is 35.0%. Based on frequency of cosmetic usage, majority of respondents use cosmetic products daily, which is 56.5%, followed by the respondents that use cosmetic products weekly, which is 25.0%, followed by the respondents which use cosmetic products occasionally, which is 11.8%, lastly followed by the respondents used cosmetic products rarely, which is 06.8%. Based on digital literacy level, most of the respondents have moderate level of digital literacy, which is 50.0%, followed by the respondents that had a high level of digital literacy, which is 32.0%, lastly followed by the respondents who low level of digital literacy, which is 18.0%.

Results based on Hypothesis:

H1. "There is a significant impact of Brand image, Price, and Availability on the decision-making of the consumers"

Table 2 represents a strong positive correlation between brand image, price, availability and decision making. The beta coefficients of 0.423, 0.170 and 0.293 respectively

Table 1: The Respondents' Demographic Profile

S. No.	Demographic characteristics	Category	N	%
1.	Age	20 - below 30	173	43.8%
		30 - below 40	122	30.5%
		40 - below 50	40	10.0%
		50 and above	65	16.3%
2.	Education	Higher Secondary Education	94	23.5%
		Bachelor's Degree	165	41.3%
		Master's Degree	65	16.3%
		Doctoral/Professional Degree	76	19.0%
3.	Occupation	Employed (Government Sector)	24	6.0%
		Employed (Private Sector)	84	21.0%
		Home maker	54	13.5%
		Self employed	84	21.0%
4.	Family Monthly Income	Student	90	22.5%
		Other	64	16.0%
		Below Rs 50, 000	112	28.0%
		Rs. 50,001 - Rs. 1,00,000	163	40.8%
5.	Marital Status	Rs. 1,00,001 – Rs. 1,50,000	51	12.8%
		Rs. 1,50,001 – Rs. 2,00,000	30	7.5%
		Rs. 2,00,001 and above	44	11.0%
		Married	260	65.0%
6.	Frequency of Cosmetic Usage	Unmarried	140	35.0%
		Daily	226	56.5%
		Occasionally	47	11.8%
		Rarely	27	6.8%
7.	Digital Literacy Level	Weekly	100	25.0%
		High	128	32.0%
		Low	72	18.0%
		Moderate	200	50.0%

indicate that the brand image, price, availability significantly influence decision making of consumers. The R-value of 0.785 reflects a relationship, while the R^2 value of 0.617 shows that 61.7% of the variance in the decision making of the consumers is explained by brand image, price, availability. Additionally, the F-statistics of 212.563 and a highly significant t-value of 6.628, 9.202, 3.878 respectively along with a p-value of 0.000, confirm the robustness and statistical significance of the model. These results validate the hypothesis, revealing that brand image, price, and availability significantly influence consumer decision-making.

H1. "There is a significant impact of AI-based marketing strategies on shaping consumer preferences and influencing

decision-making in the selection of cosmetic products"

Table 3 represents AI-driven marketing approaches significantly contribute to influencing consumer choices and guiding decision-making for choosing cosmetic products. The multivariate test employing Wilks' Lambda was significant ($\Lambda = 0.722$, F-value is 76.575, significant value is 0.000), exhibiting a combined influence on both the dependent variables. Between Subjects Effects also showing significant effects on Consumer Preference (F value is 132.803, significant value is 0.000, $R^2 = 0.250$) and Decision Making of Consumers (F value is 117.900, significant value is 0.000, $R^2 = 0.229$). These findings support the hypothesis affirming AI-based marketing strategies have a significant overall impact on consumer behaviour, influencing both

Table 2: Regression Table

Hypothesis	Regression Weights	Beta Coefficient	R	R2	F	t-value	p-value	Hypothesis Result
Hypothesis 1	Brand Image, Price, Availability > Decision Making of Consumers	0.423	0.785	0.617	212.563	6.628	0.000	Supported
		0.170				9.202	0.000	
		0.293				3.878	0.000	

Table 3: MANOVA Table

MANOVA						
Effect	Test Type	Dependent Variable	Value / SS	F	df (Hyp/Error)	Sig.
Intercept	Wilks' Lambda	Multivariate (Combined DVs)	0.484	211.594	2 / 397	0.000
AI-based Marketing Strategies	Wilks' Lambda	Multivariate (Combined DVs)	0.722	76.575	2 / 397	0.000
	Between-Subjects Effect	Consumer Preference	2322.961	132.803	1 / 398	0.000
		Decision Making of Consumers	3829.833	117.900	1 / 398	0.000

R Squared = .250 (Adjusted R Square = .248)

R Squared = .229 (Adjusted R Square = .227)

Table 4: ANCOVA Table

ANCOVA					
Dependent Variable: Consumer Preference					
Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	2434.351 ^a	4	608.588	35.092	.000
Intercept	13419.898	1	13419.898	773.808	.000
Age	204.603	1	204.603	11.798	.001
Education	296.938	1	296.938	17.122	.000
Occupation	334.071	1	334.071	19.263	.000
Family Monthly Income	116.047	1	116.047	6.691	.010
Error	6850.359	395	17.343		
Total	298406.000	400			
Corrected Total	9284.710	399			

a. R Squared = .262 (Adjusted R Squared = .255)

preferences and decision-making in cosmetic product selection.

H1. Demographic factors significantly influence consumer preferences in the selection of cosmetic products

Table 4 represents the impact of demographic factors on consumer preference, The model accounts for about 26.2% of the variance in consumer preference. Among the demographic factors, age (F value is 11.798 and significant value is 0.001), education (F value is 17.122 and significant value is 0.000), occupation (F value is 19.263, significant value is 0.000), and monthly income (F value is 6.691, p value is 0.010) all have statistically significant effects. These findings

support the hypothesis and reveal demographic factors such as age, education, occupation, and monthly family income significantly influence consumer preferences in cosmetic product selection.

Discussion

Brand image and fair, non-negotiable pricing have a significantly positive impact on the decision-making process (Albari, 2018). Corporate image, product image, and consumer perception have positively reinforced price and the purchase intention (Ike Venessa & Zainul Arifin, 2017). Quantity awareness, brand attraction, and promotional attempts affect buying behaviour in a

positive way (Waworuntu & Hasan, 2021). The consumer's choice is being modified by technologies such as virtual try-ons, personalized recommendations, and chatbot interfaces (Pandya and Padma, 2024). While virtual tools and augmented reality allow for enhanced engagement and acceptance of AI-enabled purchases, these AI-powered technologies assist in sophisticated retail analytics, customer segmentation, and omnichannel engagement strategies, thus enabling highly personalized marketing interventions and deeper consumer insight (Maheswar, 2023). However, AI integration raises concerns on ethics and privacy that must be handled lest these technologies develop stronger depressors to market dynamics.

Additionally, demographic variables have a pronounced effect on consumer preferences, especially with regard to cosmetic products. Age, income, education, and occupation are identified as main factors, with the 26-to-50 age group, middle-income consumers, and university graduates being the major consumers of mid-range cosmetics. In addition to that, gender differences play an important part in purchase decisions because social factors like urban residency are also a huge influencing factor, especially in markets like New Delhi-NCR (Oberoi & Oberoi, 2018). In addition to that, income correlates with brand preference and determines the social and cultural patterns of consumption. More and more consumers are moving away from the essential range of cosmetic products toward more specialized products, thus illustrating increased awareness and selectivity. Companies that have a clear understanding of these demographic and social factors and adapt themselves accordingly are bound to gain success at markets (Jothi, 2015). The phenomenal boom, which would be worth US\$950 million and grow by a rate of about 20% yearly, further accentuates the strategic factor of this kind for companies. Yet, there remains a gap in knowledge with regards to the cumulative effect of AI-enabled marketing policies and demographic features on consumer purchasing decisions in the FMCG and cosmetic sectors. While understanding the power of artificial intelligence (AI) in consumer decision-making, this study fills a significant gap in a few studies concerning the niche-type personalized cosmetic products area. The AI enables companies to personalize their offerings, giving technological improvements an opportunity to influence consumer behaviour. This brings a whole new perspective to tailored marketing and its psychological effects on purchase decisions.

Conclusion

Consumers make decisions regarding personalized cosmetic products based on artificial intelligence and the elements related to that, such as brand image; pricing; availability-related demographic factors; and marketing strategies being a means of applications of AI. Thus, the

study elaborates on this relationship extensively. The last discovery confirmed the significant impact of AI integration on consumers' satisfaction, trust, and purchase behaviour. AI utilities such as virtual try-ons, chatbots, and personalized recommendations not only boost consumer engagement but also impact preferences and loyalty. It was found that demographic factors such as age, education, income, and occupation do have important impacts on consumer choice, thereby supporting the hypothesis that these variables affect purchasing behaviours in a personalized context for beauty products. While earlier studies have elaborated on AI in marketing, the direct impact on behavioral intentions in cosmetics remains underexplored. The purpose of this study is to address the gap in existing literature. Similarly, the importance of digital literacy and daily-use patterns among the Pune region demographic also strengthens further the case for marching AI-driven solutions customized to the emerging urban markets. The analysis suggested an interaction between AI and classical marketing factors acting independently in stimulating consumer loyalty and confidence in purchase. Thus, companies from the cosmetic sector must carve out AI strategies that marry technological sophistication with an understanding of user expectations toward fairness, privacy, and usability. Such a balanced approach assures long-lasting customer engagement and trust. Future research may consider a broader scope across various geographies and industries, extending an investigation into the transformative effect of AI on personalized commerce. Ultimately, such insights will benefit marketers, developers, and policymakers pursuing the optimization of AI in a consumer-centric and ethically sound manner.

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