

Role of AI in Shaping Buyer Attitude, influencing factors in Buying Behaviour in branded cosmetic products

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Abstract: The present study examines the role of Artificial Intelligence in shaping buyer attitude and influencing buying behaviour toward branded cosmetic products. The cosmetic industry has been strongly affected by AI-based tools such as virtual try-on, skin analysis, personalized product recommendations, chatbots, and digital beauty advisors. These technologies help consumers select suitable products according to their skin type, shade preference, ingredients, and personal needs, thereby improving convenience, trust, satisfaction, and purchase confidence. The study also highlights that AI supports cosmetic brands in understanding consumer preferences, improving customer engagement, and strengthening brand relationships. The findings show that Trust, Convenience, Product Range, and Price are important factors influencing buying behaviour in branded cosmetic products. The t-test results indicate a significant difference in the role of AI-based influencing factors among buyers, while correlation results show that all four factors have a positive and significant relationship with buying behaviour. The SEM model further shows that these factors explain 36.6% variation in buying behaviour, with Trust having the strongest effect, followed by Product Range, Price, and Convenience.

Keywords: Artificial Intelligence, Buyer Attitude, Buying Behaviour, Branded Cosmetic Products

1. Introduction

The cosmetic industry has experienced significant transformation due to rapid advancements in digital technologies, particularly Artificial Intelligence (AI). Modern consumers are increasingly influenced by technology-driven experiences while selecting branded cosmetic products. AI has enabled cosmetic brands to understand consumer preferences, analyze skin types, recommend personalized products, and improve customer engagement through intelligent systems. Technologies such as AI-based skin analysis, virtual try-on applications, chatbots, and recommendation engines are changing the traditional buying process by making product selection more interactive and personalized.

Artificial Intelligence plays an important role in shaping buyer attitudes by providing customized experiences and reducing uncertainty during purchase decisions. Consumers often face difficulties in choosing suitable cosmetic products due to variations in skin types, shades, ingredients, and product suitability. AI-based solutions help consumers overcome these challenges by offering personalized recommendations, virtual testing facilities, and predictive suggestions. Such experiences increase consumer confidence, trust, satisfaction, and positive attitudes toward branded cosmetic products.

The buying behaviour of cosmetic consumers is influenced by several factors, including brand image, product quality, price, customer reviews, social media influence, personalization, convenience, and trust in technology. AI has strengthened these factors by enabling brands to collect and analyze consumer data, predict preferences, and deliver targeted marketing communication. AI-powered digital marketing tools allow cosmetic companies to understand consumer needs more effectively and create stronger relationships with customers.



Branded cosmetic companies are increasingly adopting AI to enhance customer experience and improve decision-making throughout the consumer journey. Virtual makeup trials, AI beauty advisors, automated customer support, and personalized skincare recommendations have become important tools for attracting and retaining customers. These technologies not only improve convenience but also influence purchase intention by creating an engaging and reliable shopping environment. However, issues related to privacy, transparency, and consumer trust remain important considerations for responsible AI adoption.

Therefore, studying the role of AI in shaping buyer attitude and influencing buying behaviour toward branded cosmetic products is important for understanding modern consumer decision-making patterns. The integration of AI with cosmetic marketing strategies provides opportunities for brands to improve customer satisfaction, develop personalized offerings, and strengthen competitive advantage. This study focuses on examining how AI applications influence consumer perceptions, attitudes, and purchasing decisions in the branded cosmetic product market.

Attitude of Buyer

Impulsive Buyer: An impulsive buyer is a consumer who makes quick and unplanned purchase decisions. Such buyers are often influenced by attractive product displays, offers, discounts, packaging, advertisements, online recommendations, and emotional appeal. In the case of branded cosmetic products, impulsive buyers may purchase a product immediately after seeing AI-based suggestions, virtual try-on results, influencer promotions, or personalized recommendations. Their buying decision is usually fast and based on interest, excitement, convenience, and immediate satisfaction.

Expulsive Buyer: An expulsive buyer is a consumer who makes a purchase decision after careful thinking, comparison, and evaluation. Such buyers do not buy products suddenly; instead, they consider factors such as product quality, price, brand reputation, ingredients, reviews, suitability, and long-term benefits. In branded cosmetic products, expulsive buyers may use AI-based tools like skin analysis, product comparison, and customer reviews before selecting a product. Their buying behaviour is more logical, planned, and based on confidence and proper information.

2. Review of Literature

1. **Chakraborty et al. (2024)**, In the research paper “Unlocking the potential of AI: Enhancing consumer experience and innovation in the beauty and cosmetic industry” The study concludes that Artificial Intelligence has become a significant driver of innovation and customer experience enhancement in the beauty and cosmetic industry. AI-based technologies such as virtual try-on, personalized recommendations, and digital beauty assistants improve consumer engagement and satisfaction by providing customized solutions. The research highlights that cosmetic brands can strengthen customer relationships and purchase intentions by effectively integrating AI into marketing and service delivery processes.
2. **Davenport et al. (2020)**, In the research paper “How artificial intelligence will change the future of marketing” The study concludes that Artificial Intelligence is transforming marketing practices by enabling companies to analyze customer data, predict consumer needs, and deliver personalized experiences. AI helps marketers improve decision-making, customer targeting, and relationship management. However, organizations must maintain a balance between technological efficiency and human interaction to build consumer trust and long-term loyalty.
3. **Dwivedi et al. (2021)**, In the research paper “Artificial Intelligence (AI): Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy” The study concludes that AI offers significant opportunities for improving business performance, consumer interaction, and decision-making across various sectors. At the same time, challenges related to privacy, ethical use, transparency, and consumer acceptance need proper attention. The research emphasizes the need for responsible AI adoption to maximize benefits while reducing potential risks.
4. **Huang & Rust (2021)**, In the research paper “A strategic framework for artificial intelligence in marketing” The study concludes that AI provides strategic advantages in marketing by improving customer understanding, personalization, and service efficiency. The authors highlight that AI should complement human intelligence rather than completely replace human involvement. Successful AI implementation requires organizations to combine technological capabilities with customer-oriented strategies to enhance value creation.
5. **Kotler et al. (2021)**, In the research paper “Marketing 5.0: Technology for Humanity” The study concludes that modern marketing is increasingly driven by advanced technologies such as Artificial Intelligence, big data, and automation. Marketing 5.0 focuses on using technology to create personalized and meaningful

customer experiences while maintaining human connection. Businesses adopting technology-driven marketing approaches can improve customer satisfaction, engagement, and competitive advantage.

6. **Lemon & Verhoef (2016)**, In the research paper “Understanding customer experience throughout the customer journey” The study concludes that customer experience is developed throughout the entire customer journey, including pre-purchase, purchase, and post-purchase stages. Businesses need to understand different consumer touchpoints to improve satisfaction and loyalty. Effective use of technology and personalized interactions can strengthen customer relationships and enhance overall buying experiences.
7. **Perret et al. (2025)**, In the research paper “Beauty Tech—Customer experience and loyalty of consumers using AR and AI-based beauty technologies” The study concludes that AI and Augmented Reality-based beauty technologies positively influence customer experience, satisfaction, and loyalty. Virtual try-on tools and AI-driven recommendations help consumers make confident purchase decisions by reducing uncertainty and increasing engagement. The research highlights that beauty brands can improve consumer loyalty by adopting innovative digital technologies that provide personalized and interactive shopping experiences.

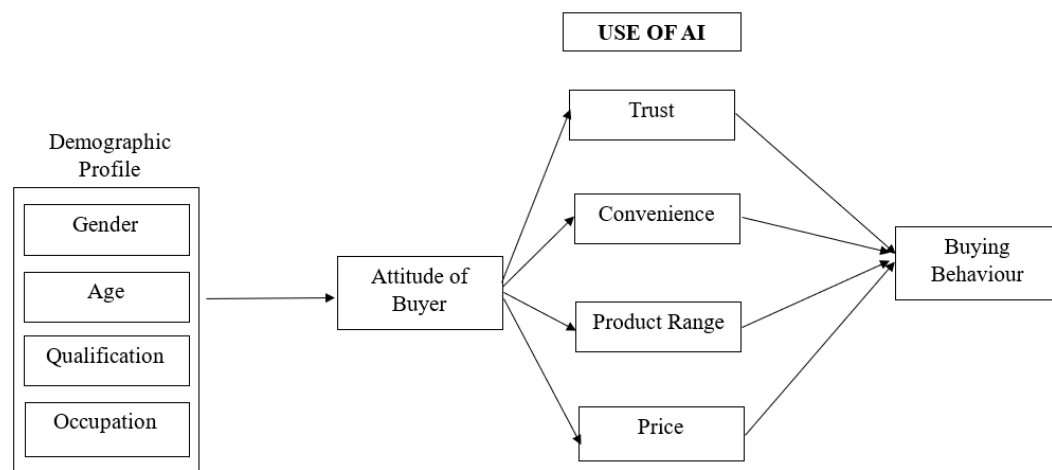
Research Gap

Although previous studies have extensively examined the role of Artificial Intelligence in marketing, customer experience, and digital transformation, limited research has focused specifically on how AI influences buyer attitude and buying behaviour toward branded cosmetic products. Existing literature mainly discusses AI applications such as personalization, virtual try-on, recommendation systems, and customer engagement, but there is insufficient empirical evidence on how these technologies affect consumer trust, purchase intention, brand perception, and decision-making in the cosmetic sector. Furthermore, limited studies have explored the combined influence of AI-driven factors with traditional buying behaviour factors such as product quality, price, brand image, convenience, and social influence. Therefore, this study attempts to address this research gap by examining the role of AI in shaping buyer attitude and identifying the key factors influencing the buying behaviour of consumers toward branded cosmetic products.

3. Research Methodology

Research Design: The present study follows a descriptive and analytical research design. Descriptive research is used to understand the role of Artificial Intelligence in shaping buyer attitude toward branded cosmetic products. Analytical research is used to examine the relationship and impact of influencing factors such as Trust, Convenience, Product Range, and Price on Buying Behaviour.

Conceptual Framework



The conceptual framework shows that the demographic profile of respondents, including gender, age, qualification, and occupation, helps in understanding the background of buyers. These demographic factors influence the attitude of buyers, which further affects how consumers respond to the use of AI in branded cosmetic products.

AI-based factors such as trust, convenience, product range, and price play an important role in shaping consumer perception and decision-making. Trust helps buyers feel confident about AI recommendations, convenience makes product selection easier, product range provides more choices, and price influences purchase affordability. Finally, these AI-driven factors collectively influence the buying behaviour of consumers toward branded cosmetic products.

Nature of the Study: The study is quantitative in nature because it is based on numerical data collected from respondents through a structured questionnaire. Statistical tools are applied to test hypotheses and interpret the relationship between AI-based influencing factors and consumer buying behaviour.

Sources of Data: The study is based on both primary and secondary data. Primary data was collected from respondents through a structured questionnaire. Secondary data was collected from research papers, journals, books, and online sources related to Artificial Intelligence, buyer attitude, cosmetic products, and consumer buying behaviour. The uploaded study includes literature from authors such as Chakraborty et al., Davenport et al., Dwivedi et al., Huang and Rust, Kotler et al., and others.

Sample Size: The sample size of the study is 160 respondents. These respondents were selected to understand their attitude and buying behaviour toward branded cosmetic products influenced by AI-based factors.

Sampling Method: The study uses a convenience sampling method. Respondents were selected based on their availability and willingness to provide information about their buying attitude and behaviour toward branded cosmetic products.

Data Collection Tool: The collected data was analyzed using statistical tools such as Independent Samples t-test, correlation analysis, and Structural Equation Modelling. The Independent Samples t-test was used to compare impulsive and expulsive buyers. Correlation analysis was used to examine the relationship between Trust, Convenience, Product Range, Price, and Buying Behaviour. SEM was used to study the effect of latent variables on Buying Behaviour through path coefficients.

Data Analysis

The data analysis section presents the interpretation of responses collected from 160 respondents regarding the role of AI in shaping buyer attitude and influencing buying behaviour toward branded cosmetic products. The collected data has been analyzed using frequency distribution, t-test, correlation, and SEM to understand demographic profile, buyer attitude, and the impact of factors such as Trust, Convenience, Product Range, and Price on buying behaviour.

Demographic Factor

Sr No.	Particular	Category	Frequency	Percent
1	Gender	Male	50	31.3
		Female	110	68.8
2	Age	Up to 25 Years	70	43.8
		26 to 35 Years	40	25.0
		36 to 45 Years	30	18.8
		Above 45 Years	20	12.5
3	Qualification	Undergraduate	50	31.3
		Graduate	80	50.0
		Postgraduate	30	18.8
4	Occupation	Student	40	25.0
		Salaried Employee	60	37.5
		Self-employed/Business	20	12.5
		Homemaker	30	18.8
		Other	10	6.3

The frequency distribution shows that out of 160 respondents, the majority were female respondents with 110 respondents, while male respondents were 50. In terms of age, the highest number of respondents belonged to the Up to 25 years category with 70 respondents, followed by 40 respondents from the 26 to 35 years group, 30 respondents from the 36 to 45 years group, and 20 respondents above 45 years. Regarding qualification, most respondents were graduates with 80 respondents, followed by 50 undergraduates and 30 postgraduates. In occupation, the largest group was salaried employees with 60 respondents, followed by 40 students, 30 homemakers, 20 self-employed/business respondents, and 10 respondents from other occupations. Overall, the sample mainly consists of female, young, graduate, and salaried respondents.

Objective and Hypothesis

Objective 1 To Study the role of AI for Influencing Factors in Buying Behaviour of branded cosmetic products.

Null Hypothesis H01: There is no significant difference in role of AI for Influencing Factors in Buying Behaviour of branded cosmetic products.

Alternate Hypothesis H11: There is a significant difference in role of AI for Influencing Factors in Buying Behaviour of branded cosmetic products.

To Study the above null Hypothesis, Independent Samples test is used and results are as follows:

Independent Samples Test				
	t-test for Equality of Means			
	t	df	P-value	Mean Difference
Trust	5.554	158	.000	6.966
Convenience	7.154	158	.000	8.703
Product Range	4.078	158	.000	5.357
Price	4.406	158	.000	5.383

Interpretation: Above results indicate that p-value is 0.000. It is less than standard value of 0.05. Therefore, the t-test is rejected. Hence null hypothesis is rejected and alternate hypothesis is accepted.

Conclusion: There is a significant difference in role of AI for Influencing Factors in Buying Behaviour of branded cosmetic products.

Findings: To understand the findings of hypothesis, mean score of role of AI for Influencing Factors in Buying Behaviour of branded cosmetic products is calculated and presented in the following table.

Group Statistics					
	Type of Buyer	N	Mean	Std. Deviation	Std. Error Mean
Trust	Impulsive	101	67.64	7.443	.741
	Expulsive	59	60.68	8.005	1.042
Convenience	Impulsive	101	77.58	7.377	.734
	Expulsive	59	68.88	7.504	.977
Product Range	Impulsive	101	76.48	8.125	.808
	Expulsive	59	71.12	7.828	1.019
Price	Impulsive	101	67.01	6.938	.690
	Expulsive	59	61.63	8.275	1.077

The group statistics table shows that Impulsive buyers have higher mean scores than Expulsive buyers in all four factors: Trust, Convenience, Product Range, and Price. For Trust, impulsive buyers scored 67.64 compared to 60.68 for expulsive buyers, showing that impulsive buyers have greater trust. Similarly, impulsive buyers scored

higher in Convenience with a mean of 77.58 compared to 68.88, indicating that convenience plays a stronger role for them. In Product Range, impulsive buyers scored 76.48 while expulsive buyers scored 71.12, suggesting that wider product variety attracts impulsive buyers more. For Price, impulsive buyers scored 67.01 compared to 61.63 for expulsive buyers, showing that price also influences impulsive buyers more. Overall, the results indicate that impulsive buyers are more positively influenced by trust, convenience, product range, and price than expulsive buyers.

Objective 2 To Study the impact of influencing factors on buying behaviour.

Null Hypothesis H02: There is no impact of influencing factors on buying behaviour.

Alternate Hypothesis H12: There is an impact of influencing factors on buying behaviour.

To Study the above null Hypothesis, Correlations test is used and results are as follows:

Correlations		
		Buying Behaviour
Buying Behaviour	Pearson Correlation	1
	P-value	
	N	160
Trust	Pearson Correlation	.394**
	P-value	.000
	N	160
Convenience	Pearson Correlation	.272**
	P-value	.001
	N	160
Product Range	Pearson Correlation	.319**
	P-value	.000
	N	160
Price	Pearson Correlation	.197*
	P-value	.013
	N	160
**. Correlation is significant at the 0.01 level (2-tailed).		
*. Correlation is significant at the 0.05 level (2-tailed).		

Interpretation: Above results indicate that p-value is 0.000. It is less than standard value of 0.05. Therefore, the correlation test is rejected. Hence null hypothesis is rejected and alternate hypothesis is accepted.

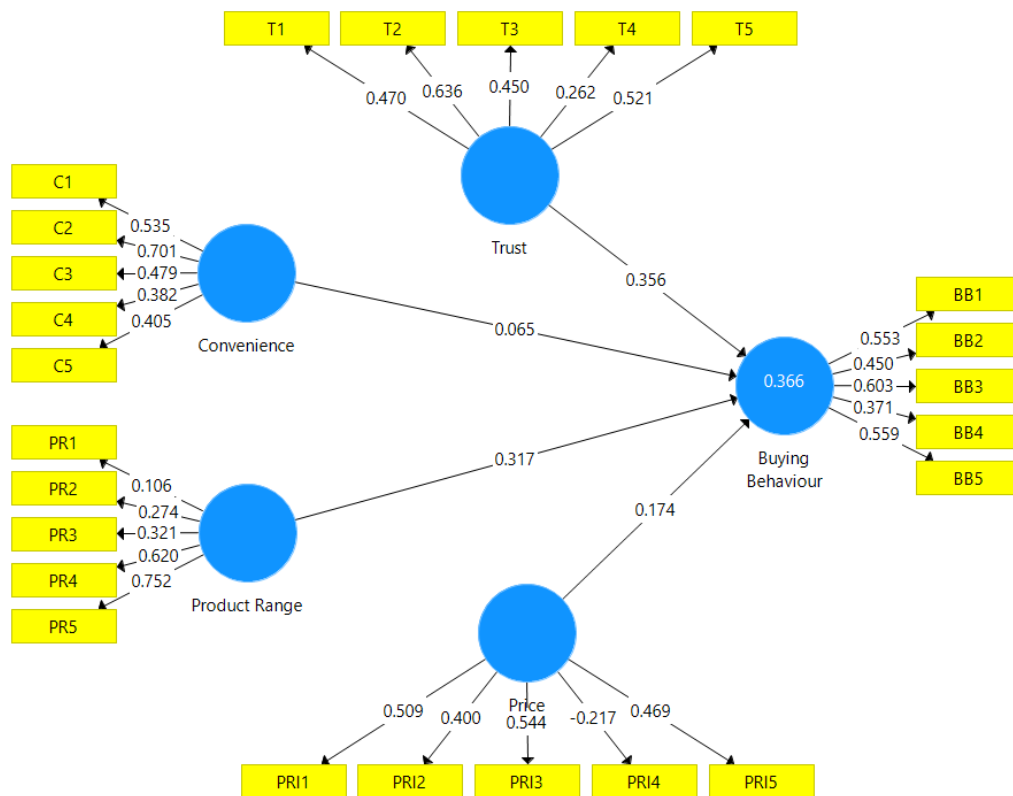
Conclusion: There is an impact of influencing factors on buying behaviour

Findings: The correlation table shows that Buying Behaviour has a positive and significant relationship with all four factors: Trust, Convenience, Product Range, and Price. Among these, Trust has the strongest positive correlation with Buying Behaviour ($r = .394$, $p = .000$), indicating that higher trust is associated with stronger buying behaviour. Product Range ($r = .319$, $p = .000$) and Convenience ($r = .272$, $p = .001$) also show moderate positive and statistically significant relationships. Price has the weakest positive correlation ($r = .197$, $p = .013$), but it is still significant at the 0.05 level. Overall, the results indicate that trust, product availability, convenience, and price all influence buying behaviour, with trust being the most important factor among them.

SEM Model

Structural Equation Model (SEM) is a statistical model used to study the relationship between observed variables and hidden/latent variables. In SEM, factors such as Trust, Convenience, Product Range, and Price are latent

variables measured through questionnaire items, and their effect on the dependent variable, Buying Behaviour, is tested through path coefficients.



The model shows that Buying Behaviour is influenced by four factors: Trust, Convenience, Product Range, and Price. The R^2 value of Buying Behaviour is 0.366, which means that these four factors together explain 36.6% variation in buying behaviour. Among the predictors, Trust has the strongest positive effect on buying behaviour with a path coefficient of 0.356, followed by Product Range with 0.317, and Price with 0.174. Convenience has a very weak effect with a coefficient of 0.065, which means it contributes very little to buying behaviour in this model. The outer loadings of many indicators are below the ideal value of 0.70, such as PR1, PR2, PRI4, BB2, and BB4, and one item of Price has a negative loading (-0.217), which indicates that some questionnaire items may not be measuring their construct properly. Overall, the model has moderate explanatory power, but several indicators need improvement or removal to make the SEM model stronger and more reliable.

Model Fit: The parameters of model fit are as follows:

SRMR means Standardized Root Mean Square Residual. It shows the average difference between the observed correlations and the model-predicted correlations. A lower SRMR value indicates better model fit. Generally, an SRMR value below 0.08 is considered good, while a value up to 0.10 may be accepted in some research situations. In simple words, SRMR tells whether the proposed model closely matches the actual data.

d_ULS means **Squared Euclidean Distance**. It measures the difference between the observed correlation matrix and the model-implied correlation matrix. A smaller d_ULS value indicates better model fit. In simple words, it shows how much difference exists between the actual data relationship and the relationship predicted by the model. If the value is low, the model is considered closer to the actual data.

d_G means **Geodesic Distance**. It also measures the difference between the observed and estimated correlation matrices, but it uses a different mathematical method. Like d_ULS, a smaller d_G value indicates better model fit. It shows whether the overall structure of the model is consistent with the collected data.

NFI means **Normed Fit Index**. It compares the proposed model with a null model, where no relationship is assumed between variables. The value of NFI ranges from **0 to 1**. A higher NFI value indicates better model fit. Generally, an **NFI value above 0.90** is considered good, but in PLS-SEM studies, slightly lower values may be accepted depending on the complexity of the model and research context.

Fit Index	Saturated Model	Ideal/Acceptable Value	Interpretation
SRMR	0.095	Less than 0.08 is good; up to 0.10 is acceptable	The SRMR value is close to the acceptable limit, so the model fit is weak to moderate.
d_ULS	2.954	Lower value is preferred	The value is relatively high, indicating some difference between the observed and predicted correlation matrix.
d_G	0.572	Lower value is preferred	This shows moderate discrepancy in the model.
Chi-Square	73.292	Lower value is preferred	The value is reasonably low, suggesting that the model fit the data.
NFI	0.912	Above 0.90 is good	The NFI value is high, which indicates excellent model fit.

The model fit results show that the overall SEM model has poor to weak model fit. The SRMR value is 0.095, which is slightly below the maximum acceptable limit of 0.10, but it is not considered a strong fit because a value below 0.08 is preferred. The d_ULS and d_G values indicate some discrepancy between the actual and estimated model. The Chi-Square value is high at 73.292, suggesting that the model fit the data very well. Most importantly, the NFI value is 0.912, which is higher than the acceptable value of 0.90, showing that the model is excellent fit. Overall, the model is good to fit and does not require any addition or deletion of questions.

4. Conclusion

The study concludes that Artificial Intelligence plays a significant role in shaping buyer attitude and influencing buying behaviour in branded cosmetic products. AI-based tools such as virtual try-on, personalized recommendations, automated support, and beauty advisors help consumers make better purchase decisions by reducing uncertainty and improving product selection. The results of the t-test show that there is a significant difference in the role of AI-based influencing factors, as the p-value is less than 0.05 for Trust, Convenience, Product Range, and Price.

Overall, the model fit results show that the model has an acceptable and fit. The SRMR value of 0.095 is within the acceptable limit of 0.10, but it is close to the upper boundary, indicating weak to moderate fit. The d_ULS and d_G values suggest some discrepancy between the observed and predicted correlation matrix, but the Chi-square value is reasonably low. The NFI value of 0.912 is above the recommended level of 0.90, indicating good model fit. Therefore, it can be concluded that the model is statistically acceptable and suitable

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