AI-Driven Personalisation in Skincare Marketing in Surat: Consumer Adoption and Industry Trends

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Abstract

Artificial Intelligence (AI) is increasingly transforming the global beauty and skincare industry through personalised product recommendations, virtual consultations, and automated skin diagnostics. AI-driven tools enable brands to design customised skincare routines based on individual skin types, environmental factors, and personal preferences. While such innovations are widely adopted in developed markets, their application in India—particularly in fast-growing tier-II cities such as Surat—remains at an emerging stage.

This study investigates the influence of AI-driven skincare marketing on consumer behaviour in Surat, focusing on adoption patterns, consumer perceptions, and industry-related challenges. The study analyses the AI strategies of major platforms, including Nykaa, Purplle, SkinKraft, and L'Oréal India, and examines the use of recommendation engines, chatbots, and virtual skin analysis systems. Findings reveal that AI-based personalisation enhances consumer engagement and satisfaction; however, adoption is constrained by concerns related to data privacy, algorithmic bias, and high costs. A comparative review of AI adoption across Indian cities highlights significant growth potential for Surat. The study offers strategic implications for skincare brands seeking to expand AI-enabled marketing in regional markets.

Keywords: AI-driven skincare, personalised beauty technology, consumer behaviour, digital marketing in Surat, AI-powered recommendations, skincare e-commerce in India.

1. Introduction

1.1 Background of the Study

The beauty and skincare industry is experiencing a paradigm shift as Artificial Intelligence (AI) integrates into digital marketing and consumer engagement strategies. AI technologies facilitate personalised skincare solutions by analysing facial images, tracking consumer behaviour, and predicting skincare needs. Applications such as virtual beauty consultations, skin diagnostics, and algorithm-based recommendations have changed how consumers interact with beauty brands.

Key AI applications in skincare include automated facial analysis, predictive product recommendations, real-time chatbot consultations, and innovative beauty tools. These innovations have enabled brands to shift from mass marketing to hyper-personalised engagement models.

1.2 AI in the Indian Skincare Industry

The Indian skincare market has seen substantial growth driven by increasing digital literacy, smartphone penetration, and the rapid expansion of e-commerce platforms. Online beauty retailers and direct-to-consumer brands increasingly rely on AI to enhance customer experience, personalise offerings, and optimise marketing strategies. AI is used for customised product formulation, virtual dermatological analysis, chatbot-based customer support, and predictive consumer analytics.

1.3 AI-Driven Skincare Marketing in Surat

Surat has emerged as one of Gujarat's fastest-growing urban economies, driven by rising digital adoption and evolving consumer lifestyles. Factors such as increasing disposable income, growing preference for online shopping, and exposure to digital beauty platforms have contributed to the gradual acceptance of AI-powered skincare tools. However, adoption remains lower than in metropolitan cities, making Surat an essential context for examining the regional diffusion of AI-driven marketing.

2. Literature Review

2.1 AI-Driven Personalisation in Skincare Marketing

Studies demonstrate that AI-based personalisation improves consumer engagement by analysing large volumes of behavioural and biometric data. AI-powered virtual try-on and skin diagnostics increase purchase confidence, while recommendation engines enhance satisfaction by matching products with individual skin needs. Machine learning algorithms allow brands to analyse past purchase behaviour and predict future preferences, thereby strengthening brand–consumer relationships (Bhavana et al., 2024).

2.2 Consumer Adoption of AI in Skincare

Consumer adoption of AI-driven skincare depends on perceived usefulness, ease of use, trust, and privacy assurance. Younger, digitally literate consumers exhibit higher acceptance of AI-based services. However, privacy concerns regarding facial data and sensitive skin information remain a significant barrier (Bulsara & Trivedi, 2023). Trust in digital platforms and the accuracy of algorithms strongly influence adoption decisions.

2.3 Industry Trends in AI-Driven Skincare Marketing

AI is redefining skincare marketing through hyper-personalisation, sustainable product development, and influencer analytics. Predictive analytics helps brands anticipate consumer

needs, while AI-based segmentation supports targeted campaigns. Sustainability-oriented AI applications also assist brands in ethical sourcing and waste reduction (Euromonitor International, 2024; IMARC Group, 2024).

3. Research Gap

Despite the growing body of research on AI in global beauty markets, several gaps remain:

1. Limited empirical research on AI-driven skincare marketing in tier-II Indian cities such as Surat.
2. Insufficient studies examining trust, affordability, and adoption drivers among Indian consumers.
3. Lack of research on algorithmic bias related to Indian skin tones and climatic conditions.
4. Minimal academic focus on regional strategies adopted by Indian skincare brands using AI.

4. Problem Statement

Although AI technologies are increasingly used in skincare marketing, adoption in Surat is constrained by data privacy risks, algorithmic bias that affects Indian skin diversity, and high costs that limit consumer accessibility.

5. Objectives of the Study

1. To analyse the role of AI in shaping skincare marketing practices in Surat.
2. To examine consumer behaviour toward AI-driven skincare solutions.
3. To assess challenges and growth opportunities in AI-enabled skincare adoption.
4. To suggest strategic recommendations for skincare businesses using AI.

6. Research Methodology

6.1 Research Design

The study adopts a **qualitative descriptive research design** based on secondary data analysis.

6.2 Data Sources

Secondary data were collected from:

- Market research reports (Euromonitor, IMARC, Statista)

- Academic journals
- Industry case studies of global and Indian skincare brands
- Comparative analyses of AI adoption across Indian cities

6.3 Research Approach

A qualitative secondary data analysis approach was selected to systematically examine trends, consumer behaviour, and industry practices related to AI-driven skincare marketing (Creswell, 2018; Silverman, 2020).

7. Validity and Reliability

Validity and reliability were ensured through:

- Source triangulation across multiple reputed databases
- Thematic consistency across literature and industry data
- Cross-city comparisons to validate regional findings

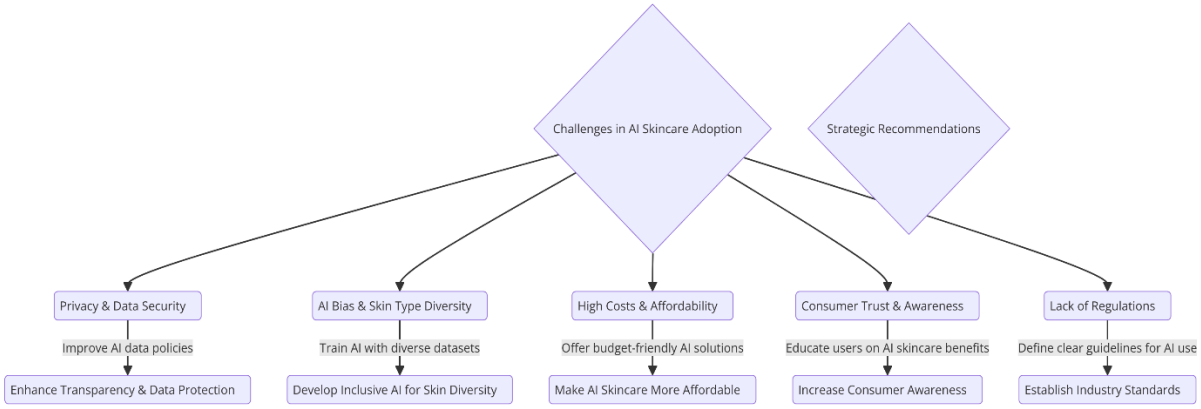
8. Limitations of the Study

- Dependence on secondary data restricts real-time consumer insights.
- The geographic focus on Surat limits broader generalisability.
- Rapid technological change may render some findings time-sensitive.
- Proprietary AI algorithms are inaccessible for technical evaluation.
- Absence of primary survey data limits behavioural depth.

9. Significance of the Study

The study provides insights into AI's role in shaping skincare consumer behaviour in emerging urban markets. It assists brands in refining digital marketing strategies, addresses privacy and inclusivity concerns, and contributes to the limited academic literature on AI-based skincare marketing in Surat.

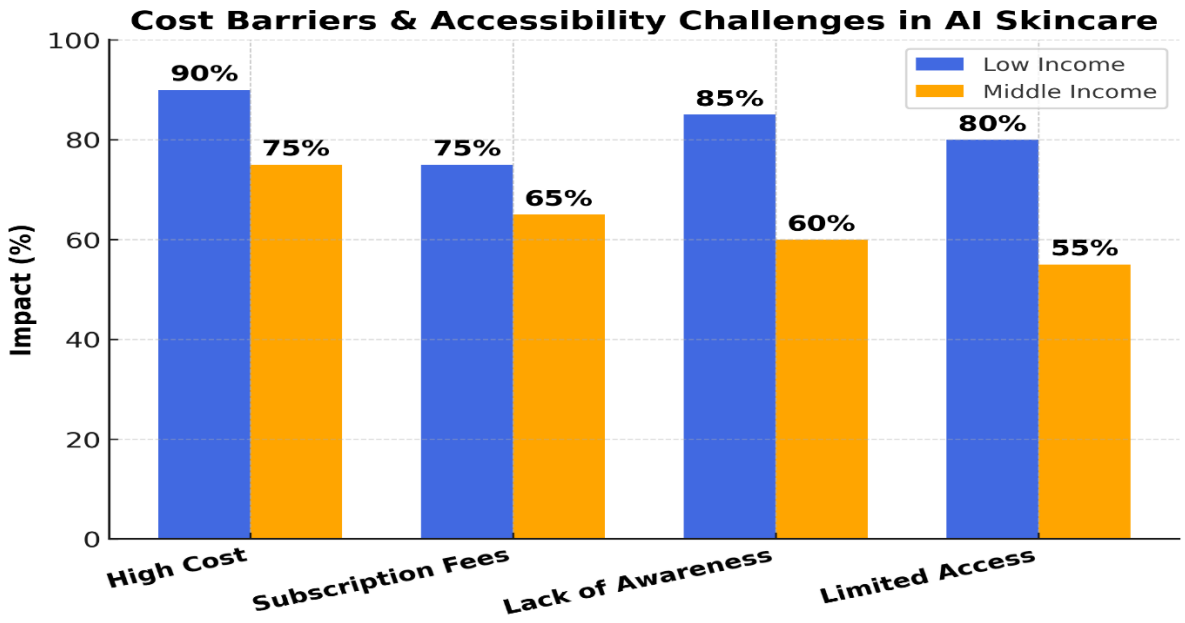
10. Data Analysis and Interpretation



10.1 Privacy and Ethical Issues

Consumers remain hesitant to share sensitive facial and skin health information due to concerns about misuse and weak data protection measures. Lack of transparency adversely affects consumer confidence and slows AI adoption.

10.2 Cost and Accessibility Barriers



High prices for AI-enabled skincare solutions and subscription-based models restrict access for middle- and lower-income consumers. Limited awareness further reduces adoption at the regional level.

10.3 Comparative AI Adoption Across Indian Cities

City	Adoption Level	Key Barriers	Growth Potential
Mumbai	High	Privacy, Cost	Very High
Delhi	Moderate–High	Algorithm Bias	High
Bangalore	High	Trust	Very High
Surat	Moderate	Cost, Awareness	High

Surat shows comparatively lower adoption but substantial future growth potential.

11. Findings

- High cost remains the primary barrier to AI skincare adoption.
- Surat represents a high-potential emerging market.
- Privacy concerns and AI bias influence consumer trust negatively.
- Localised marketing strategies are essential for regional penetration.

12. Conclusion

AI-driven personalisation has transformed skincare marketing by enhancing consumer experience and engagement. However, in Surat, adoption remains moderated by privacy concerns, algorithmic limitations, and affordability constraints. Addressing these challenges through ethical AI practices and inclusive design is essential for sustainable market growth.

13. Recommendations

1. **Enhancing Data Privacy Measures**

   Transparent data-use policies, robust consent mechanisms, and data encryption must be prioritised.

2. **Improving Algorithm Accuracy for Indian Skin Types**

   AI systems should be trained on diverse Indian datasets in collaboration with local dermatologists.

3. **Improving Affordability and Accessibility**

   Introduction of low-cost subscription models and budget-friendly AI skincare solutions.

4. **Consumer Awareness and Education**

Digital literacy initiatives, influencer collaborations, and free demo diagnostics can promote trust and usage.

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