



Consumer Awareness on Blockchain Technology Adoption in Beauty Industry in India

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ABSTRACT

Blockchain technology, often associated with cryptocurrencies like Bitcoin, is a decentralized and secure ledger system that records transactions across a network of computers. Many top-class beauty salons have started investing in blockchain app development services as the technology is meant to serve various purposes like allowing consumers to trace the entire journey of a beauty product, from raw materials to the store shelf, to verify the authenticity of high-end cosmetics and used to prove the sustainability of their products. This study aims to explore the adoption of blockchain technology in beauty products in India. The technology provides consumers precise information on the origin, quality, and movement of items by enabling real-time product tracking and verification across the supply chain. A mixed-methods approach was used in the study, integrating qualitative and quantitative research techniques. Primary data was collected using a questionnaire. The finding of the study has implications for Indian Marketers. Marketing professionals need to educate consumers about the advantages of blockchain technology and encourage its use with focused advertising. Blockchain technology increases consumer's trust, which increases brand loyalty and willingness to purchase the products.

Keywords: Blockchain technology, Beauty products, Trust, consumers, Marketing, India

INTRODUCTION

The beauty landscape in India is undergoing a major transformation propelled by creativity, research, and technology. The India cosmetics market size was valued at USD 15.46 Billion in 2025. Looking forward, the market is expected to reach USD 25.39 Billion by 2034, exhibiting a CAGR of 5.7% from 2026-2034. Innovation has become the bedrock of growth in the India Cosmetics market, with increased awareness and changing consumer preferences. New product development, eco-friendly formulation, and digital engagement tools are changing not only how beauty products are created but also how they will be marketed and consumed. This evolution reflects a larger cultural shift toward individuality, self-expression, and conscious consumption, making the cosmetics industry one of the most dynamic consumer sectors in India.

Modern consumers are not just looking for cosmetics for appearance improvement but for holistic well-being. Therefore, brands merge science, nature, and heritage into products that appeal to the diversity of beauty standards in India (IMARC Services Private Limited, 2026).

One of the most noticeable trends is the emergence of personalized beauty. Technology now enables tailored skincare and makeup solutions based on individual needs, skin tone, and climate. Consumers value experiences that align with their unique preferences, leading companies to invest heavily in data analytics and digital engagement platforms. These developments make the India Cosmetics market more customer-centric and responsive to changing habits (IMARC Services Private Limited, 2026).

In an era marked by rapid technological advancements, the beauty industry stands at the forefront of innovation. A transformative technology called Blockchain is reshaping the landscape, ushering in a new era of possibilities. Blockchain technology is making waves in the beauty sector, primarily by addressing transparency and trust issues.

For Supply Chain Transparency with blockchain, every step of a product's journey can be tracked, from raw material sourcing to manufacturing and distribution. This transparency assures consumers of product quality and authenticity, crucial in an industry rife with counterfeit products (Nagdev, 2024).

Blockchain technology is a powerful tool for promoting sustainability, supporting green production processes, and enabling real-time collection and analysis of low-carbon or green data. Blockchain technology would have a positive effect on the company's product quality, customer loyalty, market position and revenue (Prosen & Belak, 2024).

This paper focuses on the awareness Blockchain technology which is enhancing beauty industry, fostering sales growth and generating leads.

REVIEW OF LITERATURE

Raghav Goel (2024) "Blockchain-based Supply Chain Transparency in Marketing: Enhancing Trust and Traceability in Product Promotion" In recent years, the Indian market has witnessed a growing concern about product authenticity and transparency in supply chain management. The increasing demand for traceability and trust in the supply chain has led to the adoption of blockchain technology. This study aims to explore the role of blockchain-based supply chain transparency in marketing, focusing on its impact on trust and traceability in product promotion in India. The study employed a mixed-methods approach, combining both qualitative and quantitative research methods.

The study finds that blockchain-based supply chain transparency can address the challenges of counterfeiting, tampering, and mislabelling, which are prevalent in the Indian market. The technology enables real-time tracking and verification of products throughout the supply chain, providing consumers with accurate information about the origin, quality, and movement of goods. The study concludes that blockchain-based supply chain transparency is a crucial aspect of modern marketing strategy, particularly in a country like India where trust and authenticity are highly valued.

Kaur (2020) conducted a study on "The case for blockchain in the beauty industry" examines the application of blockchain technology within the beauty industry, emphasizing its potential to address issues related to counterfeit products, misleading ingredient claims, and inadequate

regulatory oversight. The study highlights the existing cosmetic regulations, particularly in the United States, often lack strict pre-market approval mechanisms, creating vulnerabilities in consumer protection. In contrast, the European Union maintains comparatively stronger regulatory standards. Within this regulatory gap, blockchain technology is presented as a promising solution to enhance supply chain transparency and product authentication. Due to its decentralized and immutable ledger system, blockchain enables verifiable tracking of ingredients, manufacturing processes, and distribution channels. The study further illustrates practical industry implementation through the case of Cult Beauty, demonstrating how blockchain can be used to validate product authenticity and increase consumer trust. Overall, the study establishes blockchain as a credibility-enhancing mechanism capable of strengthening consumer confidence and reducing counterfeiting in the beauty sector, thereby supporting the argument that blockchain-based transparency can positively influence consumer behavior.

Liu and Dawod (2025) conducted a study on “When Technology Signals Trust: Blockchain vs. Traditional Cues in Cross-Border Cosmetic E-Commerce” investigate the role of blockchain traceability as a trust signal in cross-border cosmetic e-commerce (CBEC), comparing its effectiveness with traditional authenticity cues such as platform self-operation labels, customer reviews, and compensation guarantees. Grounded in signaling theory, the study posits that consumers rely on observable signals to reduce uncertainty and assess product authenticity, especially when purchasing high-risk products like cosmetics online where physical inspection is impossible. Using a controlled experimental design across eight scenarios, the authors find that blockchain traceability is the only signal that directly and significantly increases purchase intention, and it also indirectly enhances purchase intention by reducing perceived risk. In contrast, traditional cues such as customer reviews have inconsistent effects, and self-operation or compensation policies primarily influence intention only through risk reduction. Furthermore, blockchain proves particularly effective in *low-trust environments* where traditional safeguards are weak. This research highlights the unique capacity of technology-enabled transparency to serve as a powerful authenticity signal in online beauty markets, emphasizing perceived risk as a central mediating mechanism between trust signals and consumer purchase intention.

OBJECTIVES

- To assess the consumer awareness regarding blockchain technology in beauty products.
- To examine consumers’ understanding of blockchain technology in the context of beauty product supply chains.
- To evaluate consumers’ awareness of blockchain-based features such as product traceability, authenticity verification, and QR code scanning.

INTEGRATION OF ARTIFICIAL INTELLIGENCE AND BLOCKCHAIN IN THE BEAUTY INDUSTRY

The beauty industry is increasingly experiencing the potential of artificial intelligence and blockchain technologies (Nagdev, 2024).



Personalized Beauty Solutions: Artificial intelligence analyzes consumer preferences, purchase patterns, and skincare needs to provide tailored beauty recommendations. At the same time, blockchain technology verifies the authenticity of the products purchased, ensuring that personalized recommendations are supported by genuine and traceable products.

Enhanced Data Security: The decentralized structure of blockchain improves the protection of sensitive customer information. This secure environment allows AI systems to utilize consumer data to generate personalized suggestions while maintaining data privacy and preventing unauthorized access.

Strengthened Consumer Trust: AI-powered chatbots and digital assistants can interact with consumers and provide product guidance, while blockchain-based verification confirms product authenticity. This combination builds greater trust among consumers, particularly in the beauty industry where product safety and quality are critical.

Efficient Supply Chain Management: The integration of AI and blockchain optimizes supply chain processes by minimizing operational inefficiencies and improving transparency. This helps businesses ensure timely product availability and delivery, enabling them to meet consumer demand effectively.

BENEFITS OF AI AND BLOCKCHAIN INTEGRATION IN THE BEAUTY INDUSTRY

Enhanced Customer Engagement: AI chatbots engage with customers 24/7, answering queries and guiding them through their purchase journey. This round-the-clock support leads to increased customer engagement and higher chances of conversion.

Personalized Marketing Campaigns: AI analyses customer data to create highly targeted marketing campaigns combined with blockchain's transparency, these campaigns resonate with consumers, leading to higher conversion rates.

Data-Driven Insights - Artificial intelligence can analyze large volumes of data to generate meaningful insights about consumer behavior. These insights enable brands to improve their marketing approaches and product development, leading to increased sales.

Reduced Fraud - Blockchain technology helps prevent counterfeit products through its secure and transparent verification system. This ensures that consumers receive authentic products, thereby improving customer satisfaction and strengthening brand loyalty.

Efficient Supply Chains - The integration of AI and blockchain enhances supply chain operations by improving coordination and product availability. This streamlined process helps businesses meet consumer demand efficiently and minimizes the risk of missed sales due to product shortages.

RESEARCH METHODOLOGY

The research focuses on blockchain technology used in the beauty products sector. A convenience sampling technique was employed for selecting respondents, as it allows the researcher to collect data from participants who are readily accessible and willing to participate. The total sample size for the study consists of 110 respondents. Primary data for the study were collected using a structured questionnaire and schedule designed specifically for the research. The questionnaire consisted of a series of well-organized questions aligned with the objectives of the study.

DATA ANALYSIS AND INTERPRETATION

TABLE 1: Where did you first hear about blockchain technology?

Source of Awareness	Frequency	Percentage (%)
Social media	45	37.5
News or media articles	25	20.8
Friends or family	18	15.0
Educational sources	20	16.7
I have not heard about it	12	10.0
Total	120	100

Source: Primary data

The table shows that 37.5% of respondents first heard about blockchain technology through social media, making it the most common source of awareness. About 20.8% learned about it through news or media articles, while 16.7% gained knowledge from educational sources. A smaller proportion of respondents heard about blockchain from friends or family (15%), and 10% of respondents reported that they had not heard about blockchain technology at all.

TABLE 2: How would you rate your knowledge about blockchain technology?

Knowledge Level	Frequency	Percentage (%)
Very knowledgeable	15	12.5
Moderately knowledgeable	35	29.2
Slightly knowledgeable	40	33.3
Not knowledgeable at all	30	25.0
Total	120	100

Source: Primary data

The table shows that 33.3% of respondents consider themselves slightly knowledgeable about blockchain technology, which represents the largest group. About 29.2% reported being moderately knowledgeable, while 25% stated that they are not knowledgeable at all. Only 12.5% of respondents indicated that they are very knowledgeable, suggesting that although awareness exists, detailed understanding of blockchain technology among consumers remains limited.

TABLE 3: What do you think blockchain technology can be used for in beauty products?

Blockchain technology used for beauty products	Frequency	Percentage (%)
Tracking product origin	18	15
Ensuring product authenticity	24	20
Improving supply chain transparency	16	13.3
All of the above	52	43.3
Not sure	10	8.4
Total	120	100

Source: Primary data

The majority of respondents (43.3%) believe blockchain can be used for multiple purposes in beauty products, including product origin tracking, authenticity verification, and improving supply chain transparency. This indicates that consumers recognize the broader potential of blockchain technology in the beauty industry.

TABLE 4: Do you believe blockchain can help track the origin of ingredients in beauty products?

Track the origin	Frequency	Percentage (%)
Yes	72	60
No	18	15
Not sure	30	25
Total	120	100

Source: Primary data

Most respondents (60%) believe that blockchain technology can help trace the origin of ingredients in beauty products, while 25% are uncertain about its capability.

TABLE 5: How important is supply chain transparency when buying beauty products?

Supply chain transparency	Frequency	Percentage (%)
Very important	44	36.7
Important	40	33.3
Moderately important	20	16.7
Slightly important	10	8.3
Not important	6	5
Total	120	100

Source: Primary data

A large proportion of respondents (70%) consider supply chain transparency either very important or important when purchasing beauty products, highlighting the significance of transparency in influencing consumer buying decisions.

TABLE 6: Information Preferred When Scanning a Product QR Code

QR Code information	Frequency	Percentage (%)
Ingredient origin	18	15
Manufacturing date	14	11.7
Authenticity verification	22	18.3

Product certifications	10	8.3
All of the above	56	46.7
Total	120	100

Source: Primary data

The table shows that 46.7% of respondents prefer to view all types of product information when scanning a QR code, indicating a strong interest in complete product transparency. Authenticity verification (18.3%) and ingredient origin (15%) were also considered important by consumers.

TABLE 6: Likelihood of Checking Product Information with Blockchain Traceability

Checking Product information	Frequency	Percentage (%)
Very likely	40	33.3
Likely	35	29.2
Neutral	20	16.7
Unlikely	15	12.5
Very unlikely	10	8.3
Total	120	100

Source: Primary data

The findings show that 62.5% of respondents are either very likely or likely to check product information if blockchain-based traceability is available, indicating positive consumer interest in transparent product verification technologies.

CONCLUSION

The findings of this study highlight the growing importance of technological integration in the beauty industry, particularly in the areas of transparency, product authenticity, and consumer awareness. The percentage analysis indicates that a significant proportion of respondents prefer comprehensive product information when scanning QR codes, with nearly half of the participants expressing interest in accessing multiple types of information such as ingredient origin, manufacturing details, authenticity verification, and product certifications. This demonstrates a clear consumer demand for transparency and reliable product information in beauty products.

Consumers are willing to check product information when blockchain-based traceability systems are available, suggesting a positive attitude toward the use of advanced technologies for ensuring product authenticity and safety.

These findings align with the broader technological transformation currently occurring in the beauty industry (Akbari, 2024). The industry is no longer limited to traditional cosmetic products but is increasingly adopting digital technologies such as artificial intelligence and blockchain to enhance customer experiences.

As the beauty industry continues to evolve in the digital era, the integration of AI and blockchain is expected to play a crucial role in shaping future business strategies. Brands that adopt these innovations will be better positioned to provide personalized services, maintain



transparency, and build long-term customer relationships. Ultimately, the adoption of these technologies is paving the way for a more transparent, trustworthy, and consumer-centric beauty industry, contributing to sustainable growth and improved consumer satisfaction.

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