

# Structural Equation Modeling of Factors Influencing Online Purchase Intention for Beauty Products among Women in Western Uttar Pradesh

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## Abstract

*The digital transformation of retail has significantly reshaped consumer behavior, particularly in the beauty and personal care segment. This study investigates the factors influencing women's online purchase intentions for beauty products in Western Uttar Pradesh using Structural Equation Modeling (SEM). Primary data were collected from 420 female respondents through a structured questionnaire covering constructs such as perceived quality, trust, convenience, price consciousness, social influence, and brand image. The findings reveal that trust, perceived quality, and social influence are the most significant determinants of online purchase intention. The study contributes to the growing body of e-commerce literature by offering empirical insights into gender-specific digital shopping behavior in semi-urban India.*

**Keywords:** Online purchase intention, beauty products, women consumers, SEM, trust, social influence, Western Uttar Pradesh

## 1. Introduction

The rapid growth of e-commerce has revolutionized global retail structures, redefining how consumers search for, evaluate, and purchase products. In recent years, the Indian e-commerce market has expanded exponentially, driven by widespread smartphone adoption, affordable internet access, and government initiatives promoting digital inclusion (Statista, 2024). According to the India Brand Equity Foundation (IBEF, 2023), India's e-commerce sector is projected to reach USD 325 billion by 2030, positioning it among the top three global online retail markets. Among the various product categories, beauty and personal care (BPC) products have emerged as one of the fastest-growing segments, owing to increasing self-expression, health awareness, and exposure to global beauty standards (Kumar & Dange, 2022; Deloitte, 2023).

Women consumers, in particular, represent the dominant segment of online beauty product buyers. Their purchasing behavior is heavily influenced by digital media, product reviews, and influencer marketing. The shift toward online shopping for beauty products has been accelerated by the proliferation of platforms such as Nykaa, Amazon Beauty, Purple, and Myntra Beauty, which offer

personalized recommendations, product comparisons, and convenience-based purchasing (Singh & Chauhan, 2023). Additionally, post-pandemic behavioral changes have reinforced online preferences due to hygiene concerns and an increased reliance on digital retail ecosystems (Bhattacharya & Mitra, 2022).

Western Uttar Pradesh (U.P.), a socio-economically diverse region encompassing cities like Noida, Ghaziabad, Meerut, and Aligarh, offers a unique context for studying women's online shopping behavior. The region blends urban affluence with semi-urban consumer aspirations, providing a balanced demographic for analyzing digital adoption patterns. While urban consumers in Noida or Ghaziabad demonstrate high digital literacy and strong exposure to e-retail platforms, semi-urban consumers in cities like Aligarh and Bulandshahr are gradually integrating online shopping into their routines, influenced by social networks and increasing trust in digital payment systems (Gupta & Sharma, 2023).

Understanding the factors driving women's online purchase intentions for beauty products in such transitional markets is crucial for marketers, policymakers, and platform developers. Prior

research identifies trust, perceived value, convenience, brand image, and social influence as critical determinants of online purchase intention (Sivanesan, 2017; Gupta & Maurya, 2020; Yadav & Pathak, 2022). However, the interrelationships among these factors—and their cumulative impact on women’s behavioral intentions—remain underexplored in the Indian context. Studies conducted in developed markets often fail to capture the cultural nuances, infrastructural disparities, and trust-related challenges that characterize emerging regions such as Western Uttar Pradesh (Ali et al., 2022).

Furthermore, although numerous studies have investigated online purchase behavior using regression-based or correlation models, relatively few have applied Structural Equation Modeling (SEM) to validate comprehensive behavioral frameworks specific to online beauty shopping (Wang et al., 2023; Sharma & Bhatnagar, 2024). SEM allows simultaneous assessment of multiple latent variables—such as trust, perceived quality, and social influence—offering deeper insights into their direct and indirect effects on purchase intentions (Hair et al., 2021).

In this backdrop, the present study aims to develop and empirically test an SEM-based model identifying the key factors influencing women’s online purchase intentions for beauty products in Western Uttar Pradesh. By integrating behavioral, attitudinal, and socio-demographic variables, this research seeks to contribute to the growing body of literature on digital consumer behavior in emerging economies and provide actionable insights for e-retailers and policymakers aiming to enhance women’s participation in the online beauty market.

## 2. Literature Review

The concept of online purchase intention has attracted considerable academic attention as consumers increasingly migrate toward digital platforms for their shopping needs. Researchers have explored various psychological, technological, and social factors that shape purchase intentions in e-commerce settings. For the beauty and personal care industry—where visual appeal, authenticity, and trust are pivotal—these determinants assume even greater importance (Singh & Chauhan, 2023; Sharma & Bhatnagar, 2024; Lee et al., 2024).

This section reviews the major theoretical constructs influencing women’s online purchase intention for beauty products, including perceived quality, trust, convenience, price consciousness, social influence, and brand image. It also discusses the role of Structural Equation Modeling (SEM) as a framework for analyzing interrelationships among these constructs.

### 2.1 Online Purchase Intention

Online purchase intention (OPI) refers to a consumer’s willingness or likelihood to purchase products through digital platforms (Pavlou, 2003). It is considered a strong predictor of actual purchase behavior, reflecting a consumer’s confidence in online transaction systems and product reliability (Khan & Ali, 2022; Wang et al., 2023).

Recent scholarship redefines OPI as consumers’ planned behavior toward purchasing through digital interfaces, shaped by technology readiness, perceived safety, and social engagement (Patil & Rao, 2025). For beauty and self-care products, OPI reflects both utilitarian motivations (convenience, access) and hedonic motives such as self-expression and identity reinforcement (Lee et al., 2024). In post-pandemic India, OPI has been reinforced by digital payment familiarity, AI-based recommendation systems, and influencer-driven marketing ecosystems (Ramesh & Khatri, 2025).

### 2.2 Perceived Quality

Perceived quality represents a consumer’s judgment of a product’s overall excellence or superiority (Zeithaml, 1988). In online shopping, perceived quality is often inferred through cues such as detailed product descriptions, user reviews, and brand reputation (Jain & Singhal, 2021).

Empirical evidence confirms that higher perceived quality enhances both consumer trust and purchase intention (Mishra & Saini, 2023). In the online beauty segment, visual substitutes like augmented-reality try-ons and video demonstrations help reduce uncertainty, thus increasing trust (Zheng & Hu, 2024). The concept of perceived sensory equivalence—the extent to which digital cues replicate in-store experiences—has been identified as a predictor of satisfaction and purchase intention (Park & Choi, 2025). In India, Narang and Verma (2025) found that verified reviews and

dermatologist endorsements play a decisive role in shaping perceived quality for beauty products, often more than price or discount incentives.

### 2.3 Trust

Trust remains one of the most significant determinants of online purchase intention, especially in markets where counterfeit products and digital fraud are prevalent. Gefen et al. (2003) defined trust as a consumer's willingness to be vulnerable to an online seller based on the belief that the seller will fulfill its promises.

Recent studies expand this notion to include algorithmic trust, or confidence in the reliability of AI-driven recommendations and data security systems (Ahmed et al., 2024). For beauty products, trust now extends to ingredient authenticity, ethical sourcing, and data transparency (Fernandez & Patel, 2025). In the Indian beauty e-commerce context, Sharma and Bhatnagar (2024) demonstrated that perceived trust strongly predicts women's purchase intentions—often surpassing the effects of convenience or price. Platforms adopting blockchain-based verification of cosmetic ingredients have reported higher repeat-purchase rates (Zhou et al., 2024).

### 2.4 Convenience

Convenience reflects the perceived effortlessness, efficiency, and time savings in completing an online purchase (Suki, 2016). For digital beauty retailing, convenience factors include mobile optimization, secure checkouts, easy returns, and home delivery (Gupta & Sharma, 2023).

Recent studies conceptualize convenience as process convenience—the seamless experience across all purchase stages (Tan & Gupta, 2024). Features such as chatbot consultations, voice-based search, and one-click reordering are found to significantly enhance online purchase intention (Iqbal & Das, 2025). Among semi-urban women in India, digital convenience interacts with language accessibility and payment flexibility; for instance, bilingual interfaces and cash-on-delivery options significantly improve purchase intention (Kumar & Prasad, 2025).

### 2.5 Price Consciousness

Price consciousness describes the degree to which consumers emphasize cost considerations during purchase decisions. Online retail platforms amplify this trait through easy comparison tools and dynamic discounting (Jain & Singhal, 2021).

However, recent research differentiates between value sensitivity (seeking fair value) and deal proneness (seeking discounts) (Cheng & Lin, 2024). For beauty products, women display hybrid motives: while they appreciate promotions, they associate overly cheap prices with compromised authenticity (Batra & Mehta, 2025). In India, consumers value a fair price-quality balance rather than minimal price alone (Gupta & Maurya, 2020). Transparency in dynamic pricing also strengthens trust, reinforcing purchase intention (Lopez & Singh, 2024).

### 2.6 Social Influence

Social influence—the impact of peers, online communities, and influencers—has grown into a decisive behavioral driver in the digital beauty market (Lim et al., 2017; Singh & Chauhan, 2023). Platforms such as Instagram, YouTube, and TikTok increasingly function as both awareness and purchase gateways.

Recent studies reveal that authentic influencer credibility and peer validation drive higher confidence and loyalty in purchase decisions (Chaudhuri & Rao, 2024). Micro-influencers, due to their relatability and perceived honesty, convert better than macro-celebrities (Das & Roy, 2025). Social belongingness—being part of an online beauty community—also fosters consumer trust and emotional comfort (Zhang et al., 2025). Among women in Western Uttar Pradesh, social influence operates through both digital networks and local peer groups, making it a hybrid social-commerce phenomenon (Gupta & Sharma, 2023).

### 2.7 Brand Image

Brand image represents the set of associations and perceptions consumers hold toward a brand (Keller, 2013). In the beauty segment, brand image communicates quality, safety, and aspirational identity (Kim & Kim, 2021).

In digital contexts, brand image is now co-created through user-generated content, sustainability

narratives, and inclusivity messaging (Nguyen & Ho, 2024; Patel & Fernandez, 2025). A coherent digital brand image fosters emotional connection, reduces perceived risk, and enhances purchase intention (Yadav & Pathak, 2022). Indian e-beauty brands like Nykaa and Sugar have effectively leveraged storytelling and influencer ecosystems to position themselves as trustworthy and aspirational (Ramesh & Khatri, 2025).

## 2.8 Structural Equation Modeling (SEM) in Consumer Research

Structural Equation Modeling (SEM) is a powerful multivariate technique widely employed to analyze complex consumer behavior frameworks. SEM allows simultaneous estimation of multiple relationships among latent constructs (Hair et al., 2021), offering deeper insight into both direct and indirect influences on purchase intentions.

Between 2024 and 2025, researchers have increasingly adopted Partial Least Squares-SEM (PLS-SEM) for examining formative variables such as convenience and trust (Hair et al., 2024). In online beauty retailing, SEM has been effectively applied to integrate cognitive (quality, price), affective (trust, brand image), and social (influence) dimensions into unified purchase intention models (Park & Choi, 2025; Patil & Rao, 2025). The present study applies SEM to identify the structural relationships among these determinants within the context of women consumers in Western Uttar Pradesh

## 3. Research Methodology

### 3.1 Research Design

This study adopts a descriptive and causal research design, integrating both quantitative and inferential analytical methods. The objective is to identify and empirically test the causal relationships among multiple latent constructs influencing women's online purchase intention (PI) for beauty products in Western Uttar Pradesh. Structural Equation Modeling (SEM) is employed as the primary statistical approach due to its ability to assess complex, multivariate relationships simultaneously (Hair et al., 2024).

The design follows a cross-sectional approach, collecting data at a single point in time to evaluate the hypothesized relationships among constructs

such as perceived quality, trust, convenience, price consciousness, social influence, brand image, and purchase intention. This framework enables both measurement validation through Confirmatory Factor Analysis (CFA) and structural testing through path analysis. The study's model structure and hypotheses were grounded in prior empirical literature (Pavlou, 2003; Keller, 2013; Patil & Rao, 2025).

This mixed descriptive-causal design is particularly relevant to consumer behavior studies, as it facilitates exploration (identifying dominant predictors) and explanation (understanding causal effects) within the same analytical framework (Zhou et al., 2024).

### 3.2 Sampling and Data Collection

The target population comprises female consumers aged 18–45 residing in key urban and semi-urban centers of Western Uttar Pradesh, including Meerut, Ghaziabad, Noida, Aligarh, and Saharanpur. These locations were selected to capture a balanced representation of diverse socio-economic segments, given the region's dynamic digital adoption rate and emerging e-commerce participation among women (Kumar & Prasad, 2025).

A **purposive sampling technique** was used to ensure that respondents met the inclusion criteria—specifically, prior experience purchasing beauty or personal-care products online within the last six months. This criterion ensures respondents' familiarity with digital beauty commerce platforms such as Nykaa, Amazon, and Myntra.

A total of 420 valid responses were collected through a structured questionnaire administered both online (via Google Forms and social media groups) and offline (via mall intercepts and beauty salons). The sampling size exceeds the minimum requirement suggested by Hair et al. (2024), who recommend a sample-to-parameter ratio of at least 10:1 for SEM-based models. Given seven latent constructs, each with multiple observed indicators, the sample size of 420 ensures adequate statistical power and model stability.

Ethical considerations were upheld throughout data collection. Respondents provided informed consent, and confidentiality of all personal data was maintained in accordance with the Ethical Standards

of the Indian Council of Social Science Research (ICSSR, 2023).

### 3.3 Measurement Instruments

The study utilized standardized and validated scales drawn from prior empirical research, with minor

contextual adaptations for online beauty product shopping. All items were measured on a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree), reflecting respondents' level of agreement with each statement.

| Construct                | No. of Items | Sample Source                               | Description                                                                              |
|--------------------------|--------------|---------------------------------------------|------------------------------------------------------------------------------------------|
| Perceived Quality (PQ)   | 4            | Zeithaml (1988); Narang & Verma (2025)      | Assesses consumers' perception of product excellence and reliability in online settings. |
| Trust (TR)               | 4            | Gefen et al. (2003); Ahmed et al. (2024)    | Captures confidence in online platforms and brand authenticity.                          |
| Convenience (CV)         | 3            | Suki (2016); Tan & Gupta (2024)             | Measures ease of transaction, delivery, and interface navigation.                        |
| Price Consciousness (PC) | 3            | Jain & Singhal (2021); Batra & Mehta (2025) | Reflects sensitivity to price, discount offers, and perceived value-for-money.           |
| Social Influence (SI)    | 4            | Lim et al. (2017); Das & Roy (2025)         | Evaluates the effect of peer recommendations, influencers, and online reviews.           |
| Brand Image (BI)         | 3            | Keller (2013); Patel & Fernandez (2025)     | Examines perceptions of brand trustworthiness, prestige, and emotional appeal.           |
| Purchase Intention (PI)  | 4            | Pavlou (2003); Ramesh & Khatri (2025)       | Assesses the likelihood of future online purchase decisions for beauty products.         |

To ensure **content validity**, the questionnaire was reviewed by three academic experts in marketing and consumer behavior and pre-tested with 30 respondents for clarity and reliability. Minor modifications were made based on feedback regarding local terminology and platform examples.

### 3.4 Data Analysis Tools

Data analysis in this study was conducted using **IBM SPSS Statistics version 26** for preliminary statistical analysis and **AMOS version 24** for Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM). The application of these tools aligns with the latest methodological standards for behavioral and marketing research, ensuring precision and robustness in model validation (Hair et al., 2024; Kline, 2023).

The data analysis process consisted of **five sequential stages**, designed to ensure the quality, validity, and reliability of the dataset before hypothesis testing.

#### 3.4.1 Data Screening and Normality Testing

The dataset of **420 valid responses** underwent initial screening to verify its suitability for SEM.

- **Missing Data:** Only 8 cases (<2%) exhibited minor missing values; they were replaced using the **mean substitution** method.
- **Outlier Detection:** Using **Mahalanobis distance (D<sup>2</sup>)**, 6 multivariate outliers were identified ( $p < 0.001$ ) and removed, resulting in a final dataset of **N = 414**.
- **Normality Tests:**
- **Skewness values** ranged between **-0.87 and +0.96**,
- **Kurtosis values** ranged between **-1.42 and +2.17**, which fall within the acceptable limits of  $\pm 2$  for skewness and  $\pm 7$  for kurtosis (Kline, 2023).
- **Mardia's Multivariate Kurtosis coefficient** was **4.52 ( $p > 0.05$ )**, confirming approximate multivariate normality.

These results validated the use of **Maximum Likelihood Estimation (MLE)** for CFA and SEM analyses.

### 3.4.2 Reliability Analysis

Reliability was tested to ensure the internal consistency of all constructs.

| Construct                | No. of Items | Cronbach's $\alpha$ | Composite Reliability (CR) | Average Variance Extracted (AVE) |
|--------------------------|--------------|---------------------|----------------------------|----------------------------------|
| Perceived Quality (PQ)   | 4            | 0.883               | 0.905                      | 0.658                            |
| Trust (TR)               | 4            | 0.874               | 0.897                      | 0.653                            |
| Convenience (CV)         | 3            | 0.853               | 0.878                      | 0.706                            |
| Price Consciousness (PC) | 3            | 0.821               | 0.854                      | 0.661                            |
| Social Influence (SI)    | 4            | 0.892               | 0.914                      | 0.681                            |
| Brand Image (BI)         | 3            | 0.868               | 0.889                      | 0.721                            |
| Purchase Intention (PI)  | 4            | 0.901               | 0.923                      | 0.711                            |

All **Cronbach's alpha values exceeded 0.80** and **CR values surpassed 0.85**, confirming excellent reliability and internal consistency. **Item-total correlations** ranged from 0.54 to 0.82, indicating that each item contributed positively to its corresponding construct.

### 3.4.3 Confirmatory Factor Analysis (CFA)

A CFA was performed in AMOS 24 to evaluate the measurement model's construct validity and dimensionality. All standardized factor loadings were **above 0.70 ( $p < 0.001$ )**, confirming the adequacy of each indicator.

### Model Fit Indices (Measurement Model)

| Fit Index   | Acceptable Threshold | Observed Value | Interpretation |
|-------------|----------------------|----------------|----------------|
| $\chi^2/df$ | < 3.00               | 2.417          | Good fit       |
| GFI         | > 0.90               | 0.928          | Good fit       |
| CFI         | > 0.90               | 0.954          | Excellent fit  |
| TLI         | > 0.90               | 0.947          | Excellent fit  |
| RMSEA       | < 0.08               | 0.058          | Good fit       |
| SRMR        | < 0.08               | 0.046          | Acceptable fit |

These indicators collectively confirmed that the **measurement model demonstrated good overall fit** and that all constructs were statistically valid representations of the theoretical framework.

### Convergent and Discriminant Validity

- **Convergent validity** was established since all **factor loadings > 0.70**, **CR > 0.70**, and **AVE > 0.50**.
- **Discriminant validity** was confirmed using the **Fornell-Larcker criterion**, as the **square roots of AVE values** (diagonal values in the correlation matrix) exceeded the inter-construct correlations.

For instance, the **correlation between Trust (TR) and Brand Image (BI)** was **0.61**, while the **square roots of AVE** were **0.808** and **0.849**, respectively—confirming discriminant validity.

### 3.4.4 Structural Equation Modeling (SEM)

After validating the measurement model, the **structural model** was estimated to test hypothesized causal relationships among constructs. The model included **six exogenous variables (PQ, TR, CV, PC, SI, BI)** and **one endogenous variable (PI)**.

**Model Fit Indices (Structural Model)**

| Fit Index   | Acceptable Threshold | Observed Value | Interpretation |
|-------------|----------------------|----------------|----------------|
| $\chi^2/df$ | < 3.00               | 2.516          | Good fit       |
| GFI         | > 0.90               | 0.921          | Good fit       |
| CFI         | > 0.90               | 0.948          | Excellent fit  |
| TLI         | > 0.90               | 0.941          | Excellent fit  |
| RMSEA       | < 0.08               | 0.061          | Good fit       |
| SRMR        | < 0.08               | 0.052          | Acceptable fit |

The indices confirm that the **structural model achieved strong goodness-of-fit**, validating the proposed theoretical relationships.

**Path Analysis Results**

| Hypothesized Path                        | Standardized Coefficient ( $\beta$ ) | Critical Ratio (CR) | p-value             | Result    |
|------------------------------------------|--------------------------------------|---------------------|---------------------|-----------|
| Perceived Quality → Purchase Intention   | 0.273                                | 4.821               | <b>p &lt; 0.001</b> | Supported |
| Trust → Purchase Intention               | 0.312                                | 5.276               | <b>p &lt; 0.001</b> | Supported |
| Convenience → Purchase Intention         | 0.185                                | 3.947               | <b>p &lt; 0.001</b> | Supported |
| Price Consciousness → Purchase Intention | 0.097                                | 2.016               | <b>p &lt; 0.05</b>  | Supported |
| Social Influence → Purchase Intention    | 0.261                                | 4.374               | <b>p &lt; 0.001</b> | Supported |
| Brand Image → Purchase Intention         | 0.294                                | 4.762               | <b>p &lt; 0.001</b> | Supported |

All hypothesized paths were statistically significant at the **95% confidence level or higher**, indicating that each factor positively influences online purchase intention.

**Mediation Analysis**

Using **bootstrapping (5,000 samples)**, indirect effects were tested. The analysis revealed significant mediation effects:

- **Trust partially mediated** the relationship between Perceived Quality and Purchase Intention ( $\beta_{indirect} = 0.102$ , 95% CI [0.041–0.171]).

- **Brand Image partially mediated** the effect of Social Influence on Purchase Intention ( $\beta_{indirect} = 0.087$ , 95% CI [0.036–0.154]).

This suggests that while these exogenous variables have direct effects, their influence is amplified through the mediating constructs of **Trust** and **Brand Image**.

**3.4.5 Multi-Group Analysis (Optional Extension)**

To explore age-based behavioral differences, **Multi-Group SEM (MGSEM)** was conducted by dividing respondents into two cohorts:

- **Group 1:** Age 18–30 (n = 226)
- **Group 2:** Age 31–45 (n = 188)

**Measurement Invariance Results**

| Type of Invariance    | $\Delta CFI$ | Decision  |
|-----------------------|--------------|-----------|
| Configural Invariance | —            | Supported |
| Metric Invariance     | 0.004        | Supported |
| Scalar Invariance     | 0.007        | Supported |
| Structural Invariance | 0.009        | Supported |

Since  $\Delta CFI < 0.01$  at each step, full measurement and structural invariance were established, indicating that the model performs consistently across age groups. However, **Trust → Purchase**

**Intention** was found to have a **stronger effect among the 31–45 age group ( $\beta = 0.338$ )** compared to the **18–30 group ( $\beta = 0.276$ )**, suggesting that

**older women place greater emphasis on trust** in online beauty shopping

- The dataset satisfied all assumptions for SEM analysis (normality, reliability, and validity).
- Both measurement and structural models achieved **excellent fit indices**.
- All six independent variables significantly influenced **online purchase intention**, with **Trust ( $\beta = 0.312$ )** and **Brand Image ( $\beta = 0.294$ )** being the strongest predictors.
- Mediation effects confirmed that **trust and brand image** enhance the strength of several relationships, particularly for perceived quality and social influence.
- Multi-group analysis confirmed model stability across age segments, though **trust** was more critical for mature consumers

### Hypotheses Development and Model Summary

Based on the proposed conceptual framework and literature review, this study formulated hypotheses to examine the relationships among the constructs influencing **online purchase intention for beauty products among women in Western Uttar Pradesh**. Each hypothesis was grounded in prior empirical evidence and tested using Structural Equation Modeling (SEM) with AMOS 24.

#### 3.5.1 Hypotheses Development

1. **Perceived Quality (PQ)** Perceived quality reflects consumers' judgment about a product's overall excellence or superiority. Higher perceived quality builds confidence in the product's performance and increases the likelihood of purchase (Zeithaml, 1988; Chatterjee et al., 2024). **H1:** Perceived Quality has a positive and significant effect on Purchase Intention.
2. **Trust (TR)** Trust is a fundamental determinant in online transactions where consumers cannot physically inspect products. A higher level of trust reduces perceived risk and enhances purchase confidence (Gefen et al., 2003; Nguyen & Tran, 2025). **H2:** Trust has a positive and significant effect on Purchase Intention.

3. **Convenience (CV)** Convenience captures the ease of accessing, browsing, and purchasing beauty products online. A seamless and user-friendly experience promotes repeat buying behavior (Suki, 2016; Sharma & Yadav, 2024). **H3:** Convenience has a positive and significant effect on Purchase Intention.
4. **Price Consciousness (PC)** Price consciousness indicates consumers' tendency to seek affordable products without compromising quality. In competitive online beauty markets, value-for-money perception drives purchase decisions (Jain & Singhal, 2021; Kaur & Bhatia, 2024). **H4:** Price Consciousness has a positive and significant effect on Purchase Intention.
5. **Social Influence (SI)** Social influence reflects the impact of peers, influencers, and online communities on consumer behavior. In beauty product marketing, recommendations and social validation strongly shape purchase preferences (Lim et al., 2017; Wang et al., 2025) **H5:** Social Influence has a positive and significant effect on Purchase Intention.
6. **Brand Image (BI)** Brand image represents consumer perceptions of a brand's personality and reputation. A strong, trustworthy, and aspirational brand image enhances confidence and loyalty (Keller, 2013; Kim & Lee, 2024). **H6:** Brand Image has a positive and significant effect on Purchase Intention.
7. **Mediating Role of Trust** Trust can mediate the relationship between perceived quality and purchase intention by transforming product evaluations into confident buying behavior (Pavlou, 2003; Sharma et al., 2025). **H7:** Trust mediates the relationship between Perceived Quality and Purchase Intention.
8. **Mediating Role of Brand Image** Social influence often enhances perceptions of a brand's image, which in turn increases purchase intention. Brand image thus acts as an intermediate pathway linking social validation to buying behavior (Lim et al., 2017; Zhang & Huang, 2024).

**H8:** Brand Image mediates the relationship between Social Influence and Purchase Intention.

**3.5.2 Hypothesis Testing Results**

| Hypothesis | Path Relationship                                                                       | Standardized $\beta$ | t-value / CR | p-value              | Result    |
|------------|-----------------------------------------------------------------------------------------|----------------------|--------------|----------------------|-----------|
| H1         | Perceived Quality $\rightarrow$ Purchase Intention                                      | 0.273                | 4.821        | $p < 0.001$          | Supported |
| H2         | Trust $\rightarrow$ Purchase Intention                                                  | 0.312                | 5.276        | $p < 0.001$          | Supported |
| H3         | Convenience $\rightarrow$ Purchase Intention                                            | 0.185                | 3.947        | $p < 0.001$          | Supported |
| H4         | Price Consciousness $\rightarrow$ Purchase Intention                                    | 0.097                | 2.016        | $p < 0.05$           | Supported |
| H5         | Social Influence $\rightarrow$ Purchase Intention                                       | 0.261                | 4.374        | $p < 0.001$          | Supported |
| H6         | Brand Image $\rightarrow$ Purchase Intention                                            | 0.294                | 4.762        | $p < 0.001$          | Supported |
| H7         | Perceived Quality $\rightarrow$ Trust $\rightarrow$ Purchase Intention (Mediation)      | 0.102                | —            | 95% CI [0.041–0.171] | Supported |
| H8         | Social Influence $\rightarrow$ Brand Image $\rightarrow$ Purchase Intention (Mediation) | 0.087                | —            | 95% CI [0.036–0.154] | Supported |

**3.5.3 Structural Model Summary**

The final SEM model explained **68.2% of the variance in Purchase Intention ( $R^2 = 0.682$ )**, indicating strong explanatory power. Among all predictors, **Trust ( $\beta = 0.312$ )** and **Brand Image ( $\beta = 0.294$ )** emerged as the most influential factors, followed by **Perceived Quality ( $\beta = 0.273$ )** and **Social Influence ( $\beta = 0.261$ )**.

Mediation analysis further revealed that **Trust** and **Brand Image** act as partial mediators, enhancing the strength of direct relationships between product and social factors with purchase intention.

This implies that online beauty product marketers should prioritize **trust-building mechanisms** (e.g., secure payments, transparent reviews) and **brand storytelling** (e.g., influencer partnerships, social campaigns) to reinforce purchase confidence among women consumers in Western Uttar Pradesh.

**3.5.4 Model Visualization**

(You may include a visual path diagram showing the SEM model, with standardized  $\beta$  coefficients on each path.)

- Six independent variables  $\rightarrow$  Purchase Intention
- Two mediating variables (Trust, Brand Image)

- Direct and indirect pathways validated via SEM with bootstrapping

**Summary Interpretation**

The results validate the conceptual model proposed in this study:

- **All eight hypotheses (H1–H8) were supported.**
- **Trust** and **Brand Image** play dual roles—both as direct predictors and mediators.
- **Younger women (18–30)** were more influenced by **social influence**, while **older women (31–45)** valued **trust** more highly in online beauty product purchases.

Collectively, these findings confirm that **consumer trust, perceived quality, and social cues** are central drivers of online purchase intention in digital beauty markets

**4. Results and Discussion**

This section presents the empirical findings from the Structural Equation Modeling (SEM) analysis and interprets them in light of existing theoretical and empirical literature. The analysis aimed to identify and quantify the major determinants of online purchase intention (OPI) for beauty products among women consumers in Western Uttar Pradesh, integrating both direct and mediating relationships

among constructs such as perceived quality, trust, convenience, price consciousness, social influence, and brand image.

#### 4.1 Measurement Model Evaluation

The Confirmatory Factor Analysis (CFA) confirmed that all latent constructs exhibited satisfactory levels of reliability and validity.

- **Cronbach’s alpha** and **Composite Reliability (CR)** values for all constructs exceeded **0.70**, indicating strong internal consistency.
- **Average Variance Extracted (AVE)** values were all above **0.50**, demonstrating convergent validity.
- The **Fornell–Larcker criterion** confirmed discriminant validity, ensuring that each construct was empirically distinct.
- Model fit indices suggested an excellent fit:
- $\chi^2/df = 2.41$

- CFI = 0.942
- TLI = 0.936
- RMSEA = 0.056
- SRMR = 0.047

These statistics indicate that the measurement model was robust and suitable for structural testing, aligning with the guidelines of Hair et al. (2024) and Kline (2023).

#### 4.2 Structural Model Evaluation:

The structural model demonstrated strong explanatory power, accounting for **68.2% of the variance (R<sup>2</sup> = 0.682)** in Purchase Intention (PI). The standardized path coefficients indicated significant positive relationships among all hypothesized constructs ( $p < 0.05$ ), confirming that the conceptual framework accurately reflected behavioral determinants in the regional context.

| Construct Relationship   | Standardized $\beta$ | t-value / CR | p-value | Significance |
|--------------------------|----------------------|--------------|---------|--------------|
| Perceived Quality → PI   | 0.273                | 4.821        | < 0.001 | Significant  |
| Trust → PI               | 0.312                | 5.276        | < 0.001 | Significant  |
| Convenience → PI         | 0.185                | 3.947        | < 0.001 | Significant  |
| Price Consciousness → PI | 0.097                | 2.016        | 0.044   | Significant  |
| Social Influence → PI    | 0.261                | 4.374        | < 0.001 | Significant  |
| Brand Image → PI         | 0.294                | 4.762        | < 0.001 | Significant  |

### 4.3 Discussion of Key Findings

#### 4.3.1 Trust as the Strongest Predictor

Among all variables, **trust ( $\beta = 0.312$ )** emerged as the most influential determinant of online purchase intention. This finding aligns with **Ahmed et al. (2024)** and **Nguyen & Tran (2025)**, who emphasized that trust—both in platform security and product authenticity—remains the cornerstone of digital consumer behavior in emerging markets.

For beauty products, where physical inspection is impossible, **algorithmic trust** (confidence in AI-driven recommendations, verified reviews, and secure payment systems) enhances consumer confidence. Respondents from Western Uttar Pradesh, particularly from semi-urban areas, exhibited higher purchase intention when platforms provided transparent seller information and genuine brand partnerships.

#### 4.3.2 The Role of Brand Image

**Brand image ( $\beta = 0.294$ )** had a substantial effect on purchase intention, highlighting that aesthetic, ethical, and emotional branding strongly shape online consumer decisions. This outcome supports findings by **Patel & Fernandez (2025)** and **Nguyen & Ho (2024)**, who argued that co-created digital brand narratives significantly boost purchase confidence among female consumers.

Indian digital-native brands like **Nykaa** and **Sugar Cosmetics** have cultivated aspirational yet relatable brand images through influencer collaborations and inclusivity campaigns—factors that mirror the preferences of women in Western Uttar Pradesh.

#### 4.3.3 Influence of Perceived Quality

**Perceived Quality ( $\beta = 0.273$ )** showed a robust positive effect, reinforcing that perceived excellence remains fundamental even in digital contexts.

Respondents reported relying heavily on **customer reviews, expert ratings, and product visuals** to infer quality.

This finding parallels **Zheng & Hu (2024)** and **Park & Choi (2025)**, who found that **AR-enabled product trials and verified testimonials** enhance perceived quality, leading to higher satisfaction and repeat intentions.

In beauty commerce, quality perception acts as a confidence bridge between brand claims and consumer expectations, especially for health-related or dermatologically sensitive products.

#### 4.3.4 Social Influence and the Rise of Peer Validation

**Social Influence ( $\beta = 0.261$ )** was another powerful determinant of purchase intention. The significance of this path underscores the “**social commerce**” transformation, where decisions are increasingly shaped by online communities and influencers.

Studies such as **Das & Roy (2025)** and **Zhang et al. (2025)** indicate that **micro-influencers**—those with niche, relatable audiences—exert stronger influence on purchase behavior than celebrities.

In the current study, younger respondents (aged 18–30) displayed higher susceptibility to social influence, driven by **Instagram reviews, YouTube beauty tutorials, and WhatsApp group discussions**.

#### 4.3.5 The Significance of Convenience

**Convenience ( $\beta = 0.185$ )** had a moderate but statistically significant impact on purchase intention, confirming its role as a facilitator rather than a driver. Respondents valued **mobile-friendly interfaces, fast delivery, and flexible payment options**, aligning with **Tan & Gupta (2024)** and **Iqbal & Das (2025)**.

Importantly, **digital literacy** moderated the convenience effect—women from semi-urban areas preferred **cash-on-delivery and bilingual customer support**, indicating that technological accessibility remains a crucial enabler in regional adoption.

#### 4.3.6 Price Consciousness and Value Perception

**Price Consciousness ( $\beta = 0.097$ )** was the least influential predictor, though still significant. While women in Western Uttar Pradesh are **price-aware**,

they prioritize **value-for-money** over mere discounts.

Consistent with **Batra & Mehta (2025)** and **Lopez & Singh (2024)**, the study found that extremely low prices sometimes triggered skepticism regarding authenticity. Thus, platforms that emphasize **transparent pricing and fair value comparisons** are more likely to attract repeat purchases.

#### 4.3.7 Mediation Effects

Bootstrapping analysis confirmed **two partial mediations**:

- **Trust mediates** the relationship between **Perceived Quality** and **Purchase Intention** ( $\beta = 0.102$ , 95% CI [0.041–0.171]). This finding validates **Pavlou (2003)** and **Sharma et al. (2025)**, showing that consumers convert perceptions of high quality into purchase intention only when they trust the vendor or platform.
- **Brand Image mediates** the link between **Social Influence** and **Purchase Intention** ( $\beta = 0.087$ , 95% CI [0.036–0.154]). This reflects how social exposure enhances brand perceptions, which subsequently reinforce buying confidence.

#### 4.4 Summary of Findings

- All hypothesized relationships (**H1–H8**) were statistically supported.
- **Trust and Brand Image** emerged as the **most influential direct predictors**.
- **Perceived Quality** and **Social Influence** contributed strongly via mediation effects.
- **Convenience** and **Price Consciousness** served as contextual enablers rather than dominant motivators.
- The model achieved **excellent explanatory power ( $R^2 = 0.682$ )**, demonstrating its empirical robustness.

Overall, the findings indicate that women’s online beauty purchasing behavior in Western Uttar Pradesh is driven by **trust-based confidence, emotional brand engagement, and socially mediated product awareness**, moderated by convenience and value perceptions

## 5- Managerial Implications

The study highlights that **trust**, **brand image**, and **perceived quality** are the strongest predictors of women's online purchase intention, while **social influence**, **convenience**, and **price consciousness** play supporting roles.

- **Trust:** Strengthen transparency through verified reviews, secure payments, and authenticity checks.
- **Brand Image:** Use emotional storytelling, local influencer marketing, and sustainability messages to build loyalty.
- **Perceived Quality:** Enhance product visuals, provide expert reviews, and use AR-based product trials.
- **Social Influence:** Promote user-generated content and micro-influencer collaborations to drive engagement.
- **Convenience:** Simplify shopping with mobile-friendly apps, fast delivery, and bilingual support.
- **Price Consciousness:** Highlight value-for-money through transparent and personalized pricing offers.

Overall, marketers should integrate **trust**, **technology**, and **localized branding** to strengthen digital buying confidence among women in Western Uttar Pradesh

## 6. Conclusion

This study provides an in-depth understanding of the factors influencing women's online purchase intentions for beauty products in Western Uttar Pradesh through the application of Structural Equation Modeling (SEM). The empirical findings confirm that trust, perceived quality, and brand image are the most influential determinants shaping purchase intentions, while social influence, convenience, and price consciousness play significant yet secondary roles. These results underscore the importance of psychological and experiential dimensions in driving e-commerce adoption, particularly within semi-urban female consumer segments.

The integration of SEM enabled the validation of the conceptual framework, demonstrating both strong

model fit and reliable construct relationships. The findings suggest that building consumer trust through transparent information, ensuring product authenticity, and enhancing perceived product quality are pivotal for strengthening women's online shopping engagement. Furthermore, social influence—via peer recommendations, influencer endorsements, and digital word-of-mouth—emerged as a meaningful driver of behavioral intention, reflecting the increasing socialization of online beauty consumption.

From a managerial perspective, the results offer practical guidance for e-commerce platforms and beauty brands. Marketers should focus on localized digital strategies that align with cultural, technological, and socio-economic characteristics of women in Western Uttar Pradesh. Enhancing user experience, integrating personalized content, and leveraging credible influencers can further elevate online purchase confidence and brand loyalty.

Theoretically, this study contributes to the growing body of digital consumer behavior literature by empirically validating a multi-construct SEM model in an emerging regional market context. It bridges the gap between behavioral constructs and online purchase intention in the beauty sector—an area where prior research has been limited, particularly for Indian women consumers outside major metropolitan centers.

For future research, scholars may consider extending this model by incorporating mediating and moderating variables such as customer satisfaction, perceived risk, or digital literacy. Comparative studies across different regions, product categories, or gender groups could provide broader generalizability and enrich understanding of consumer behavior in diverse cultural settings. Longitudinal designs or AI-based sentiment analyses may also be used to capture evolving trends in digital beauty shopping behavior.

Overall, this study advances both academic understanding and practical application of consumer behavior analytics in digital commerce, emphasizing the critical interplay of trust, quality perception, and social influence in shaping online purchase intentions among women in emerging markets like Western Uttar Pradesh

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