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Research Article

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

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Abstract: In this Research paper will discuss about the how consumer responding on digital transformation in specially beauties product as well personal care. The approach of this study is the structural equation modeling (SEM) method, which is used to study the factors influencing the purchase intention of cosmetic items among women in Western UP in online environment. Primary data was collected from 420 female respondents using a systematic questionnaire and the concepts such as perceived quality, trust, convenience, price consciousness, social impact and brand image were used. The findings indicate that the factors that have the greatest influence on online purchase intention are perceived quality, trust and social influence. The research offers empirical findings about the gender specific digital purchase behavior in semi-urban India, which helps in enriching the growing body of e-commerce research.

Keywords: Western Uttar Pradesh, Beauty Items, Women's Customers, Sem, Trust and Social Impact

INTRODUCTION

The explosive growth of e-commerce has reshaped retail systems around the world and has dramatically transformed the way customers search for, evaluate and purchase goods. The Indian e-commerce industry has seen a significant rise over the years, especially with the rise of smartphones, cheap internet access and government initiatives to promote digital inclusion. India's e-commerce industry is expected to grow to USD 325 billion by 2030, placing it in the top three worldwide online retail marketplaces, according to the India Brand Equity Foundation (IBEF). BEAUTY and Personal Care (BPC) products are one of the fastest-growing categories due to increased self-expression, health awareness and awareness of international beauty standards. Most of the users who buy beauty products online are females. Influencer marketing, product evaluations and digital media all have a significant impact on their purchase decisions. The ways in which these variables interact and together influence women's behavioral intentions in the Indian context, however, are poorly understood. In markets where studies have been conducted, factors such as trust, lack of infrastructure and nuances of culture are often neglected, which are prevalent in markets of developing areas like Western Uttar Pradesh [1]. Moreover, several researchers have applied regression or correlation models to investigate the online shopping phenomenon, but only a few researchers have used a Structural Equation Model (SEM) to analyze the complete models related to online beauty purchasing [2].

Literature Review

With that being said, as customers now increasingly turn to digital channels for their shopping needs, researchers are closely looking into the concept of online shopping intent. The academics have studied many psychological, technological and sociological factors that impact consumer purchase intentions in the e-commerce environment [3]. The importance of these factors is accentuated even more in the field of beauty and personal care products, where trust, authenticity and captivating appearances play a significant role. In this section, the major theoretical constructs that influence women's online purchase of beauty products will be explored [4].

Online Purchase Intention

Online Purchase Intent (OPI) is a consumer's inclination and/or eagerness to buy online. Khan and Ali [1] and Wang *et al*. actually consider it a strong indicator of purchasing behavior and a reflection of the confidence of the customer in the reliability of the items and transaction system employed online. Recent study confirms that OPI is the probable response of consumers for digital interface-based purchasing which depends on social participation, technological readiness and feeling of security.

Quality Perception

In the digital marketplace, the quality of a product is assessed based on its information, feedback from other consumers and brand reputation. Empirical evidence shows that the better the perceived quality, the more customers will trust in and purchase the product. For online beauty sellers, the uncertainty and skepticism can be mitigated by offering visual elements such as augmented reality try-ons and video demos, which enhance trust. The extent to which digital signs mimic the in-store experience is called 'perceived sensory equivalence' (i.e. similarity of sensory experience) and has been found to be an important indicator of customer happiness and willingness to buy [5].

The Impact of Society

Recent studies have shown that customer trust and loyalty is enhanced when they are influenced by real-life people and when friends approve them. Unlike macro celebrities, micro-influencers are more effective in conversion, as people feel attached to them and they are regarded as being honest. Additionally, social engagement (participating in an online community of beauty) improves customer trust and emotional comfort. Social influence among the women of western Uttar Pradesh is a mixed grassroots and online social-commerce influence which operates through local networks and through online networks [6].

Image of the Brand

A brand image represents the involvement of the brand with its readers and their impression of the brand. In the beauty industry, brand image represents quality, safety and even a dream identity. A similar brand image digitally helps customers to want to purchase goods, decrease their fear of risk and boost their emotional involvement. India's e-beauty companies, such as Nykaa and Sugar, have been able to establish themselves as trustworthy and recognizable companies using influencer networks and storytelling.

MATERIALS AND METHODS

Data Gathering and Sampling

It consisted of population of age group 18 to 45 from Metro cities, semi-urban and adjoining areas in western UP.

Instruments for Measuring

The study used standard and validated metrics taken from previous empirical research, which made small changes to the purchase of cosmetic products online (Table 1). A 5-point Likert scale was used to find people's agreement on each statement, with 1 meaning "completely disagree" and 5 meaning "completely agree."

Data Analysis Tools

Data analysis was conducted using Structural Equation Modelling (SEM) and Confirmatory Factor Analysis (CFA) using AMOS software version 24 and preliminary statistical analysis was conducted using IBM SPSS Statistics software version 26. These tools are consistent with the most up-to-date methodological recommendations for behavioral and marketing research, providing accuracy and robustness in model validation, as suggested by Hair and Kline.

Table 1: Summary of the Study Results

Construct	No of Items	Sample Source	Description
Perceived Quality (PQ)	4	Zeithaml, Narang and Verma	Assesses consumers' perception of product excellence and reliability in online settings
Trust (TR)	4	Gefen *et al*. and Ahmed *et al*. [4]	Captures confidence in online platforms and brand authenticity
Convenience (CV)	3	Suki, Tan & Gupta	Measures ease of transaction, delivery and interface navigation
Price Consciousness (PC)	3	Jain & Singhal, Batra & Mehta [8]	Reflects sensitivity to price, discount offers and perceived value-for-money
Social Influence (SI)	4	Lim *et al*. and Das & Roy	Evaluates the effect of peer recommendations, influencers and online reviews
Brand Image (BI)	3	Keller, Patel & Fernandez	Examines perceptions of brand trustworthiness, prestige and emotional appeal
Purchase Intention (PI)	4	Pavlou, Ramesh & Khatri	Assesses the likelihood of future online purchase decisions for beauty products

The data analysis method consisted of five steps in order to obtain the valid and reliable data set before conducting hypothesis testing [7].

Testing for Normalcy and Data Screening

To make sure that every construct was internally consistent, reliability was evaluated.

Excellent reliability and internal consistency were confirmed by all Cronbach's alpha values over 0.80 and CR values exceeding 0.85. Each item had a positive contribution to the associated construct, as seen by the item-total correlations, which varied from 0.54 to 0.82 (Table 2).

Analysis of Confirmatory Factors (CFA)

The measurement model's construct validity and dimensionality were assessed using a CFA in AMOS 24. The appropriateness of each indicator was confirmed by all standardized factor loadings being more than 0.70 ($p<0.001$) (Table 3).

These indicators confirmed that all constructs met the statistical validity for the theoretical model and that the measurement model had a good overall fit [8].

Discriminant and Convergent Validity

- All factor loadings were more than 0.70 and CR was more than 0.70, AVE was more than 0.50, which meant convergent validity was established
- Due to the AVE diagonal values being larger than the inter-construct correlations, the Fornell-Larcker criterion was used to confirm the discriminant validity
- For instance, square roots of AVE were 0.808 and 0.849, respectively and the correlation between TR and BI was 0.61, which was considered to show discriminant validity

Modelling with Structural Equation (SEM)

After establishing validity of the measurement model, the structural model was calculated to investigate potential causal relationships between the constructs. In this study six exogenous variables were used, namely PQ, TR, CV, PC, SI and BI, as well as one endogenous variable, namely PI (Table 4).

Indices of Model Fit (Structural Model)

The indices validate the suggested theoretical linkages by confirming that the structural model obtained significant goodness-of-fit [9].

Table 2:

Construct	No. of Items	Cronbach's α	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

Table 3:

Fit Index	Acceptable Threshold	Observed Value	Interpretation
χ^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

Table 4:

Fit Index	Acceptable Threshold	Observed Value	Interpretation
χ^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

Results of the Path Analysis
At the 95% confidence level or greater, all proposed routes were statistically significant, suggesting that each element had a favorable impact on the desire to make an online purchase (Table 5).

Analysis of Multiple Groups (Optional Extension)
There are used tools to identify the behavior on the behalf of age.

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

Results of Measurement Invariance

- The dataset met the validity, reliability and normalcy requirements for SEM analysis
- Excellent fit indices were attained by both measurement and structural models
- Online purchase intention was strongly impacted by all six independent factors, with the strongest predictors being Trust (β = 0.312) and Brand Image (β = 0.294)
- The strength of a number of relationships is strengthened by trust and brand image, especially for perceived quality and social impact, according to mediation effects (Table 6)

Development of Hypotheses and Model Synopsis
This research formulated hypothesis to find out the relationship between the factors influencing women of western Uttar Pradesh to make online purchases of beauty products using the proposed conceptual model and literature review. Based on previous empirical studies, each hypothesis was evaluated by using the Structural Equation Modeling (SEM), AMOS 24 software.

Development of Hypotheses
Perceived Quality (PQ): Consumers' assessments of a product's general excellence or superiority are reflected in perceived quality. Better perceived quality increases the likelihood of buying and leads to greater trust in the product's usefulness [2].

- **H1:** Purchase intention is positively and significantly impacted by perceived quality

Trust (TR)
In online transactions when customers are unable to personally verify things, trust is a key factor. A higher level of trust leads to higher buying confidence and reduced perceived risk.

- **H2:** Purchase intention is positively and significantly impacted by trust

Convenience (CV)
How easy it is to navigate, view and purchase beauty products online. Smooth and easy-to-use interface promotes repeat sales.

- **H3:** Convenience has a positive and significant effect on purchase intention

Table 5:

Hypothesized Path	Standardized Coefficient (β)	Critical Ratio (CR)	p-value	Result
Perceived Quality → Purchase Intention	0.273	4.821	p<0.001	Supported
Trust → Purchase Intention	0.312	5.276	p<0.001	Supported
Convenience → Purchase Intention	0.185	3.947	p<0.001	Supported
Price Consciousness → Purchase Intention	0.097	2.016	p<0.05	Supported
Social Influence → Purchase Intention	0.261	4.374	p<0.001	Supported
Brand Image → Purchase Intention	0.294	4.762	p<0.001	Supported

Table 6:

Type of Invariance	ΔCFI	Decision
Configural Invariance	-	Supported
Metric Invariance	0.004	Supported
Scalar Invariance	0.007	Supported
Structural Invariance	0.009	Supported

Price Consciousness (PC)
The inclination of customers to look for reasonably priced goods without sacrificing quality is indicated by price consciousness. Perceptions of Value for Money (VFM) are significant in competitive online beauty markets for purchase decision [3].

- **H4:** Price consciousness positively and significantly affects purchase intention

Social Influence (SI)
The influence of online communities, peers and influencers on customer behavior is reflected in social influence. Social validation and recommendations are also crucial influencers on purchase decisions in the marketing of beauty products.

- **H5:** Purchase intention is positively and significantly impacted by social influence

Brand Image (BI)
Consumer views of a brand's character and reputation are represented by brand image. A strong and reliable brand image with aspirations can foster confidence and loyalty.

- **H6:** Purchase intention is positively and significantly impacted by brand image

Mediating Role of Trust
Trust can mediate between the product assessment and the intention to buy, where the product assessment can be translated into assured purchasing behavior.

- **H7:** Trust is a mediator between perceived quality and purchase intention

Social influence is often the way of enhancing a brand's image and thus its purchase intention, in the process known as the brand's mediating function. Therefore, brand image is a connector between consumers' purchasing and social approval.

- **H8:** The association between Social Influence and Purchase Intention is mediated by Brand Image

Synopsis of the Structural Model
Finally, the last SEM model had a good explanatory power ($R^2 = 0.682$). Trust (β = 0.312) and Brand Image (β = 0.294) were the most important predictors followed by Perceived Quality (β = 0.273) and Social Influence (β = 0.261).

RESULTS AND DISCUSSION

This part presents empirical results from the structural equation modeling (SEM) analysis and the interpretation of the results in the light of the existing theory and empirical studies. The factors which determine the willingness of women towards online shopping (OPI) of cosmetic products in western part of Uttar Pradesh were identified and measured. The factors "perceived quality," "trust," "convenience," "price awareness," "social impact," and "brand image" were identified to have direct and indirect relationships.

The student will evaluate structural models (Table 7).

It is a strong model that the p-value (<0.05) and R2 (0.682) are from the model that states the purchase intent.

- There is association between (H1-H8)
- Found the most significant indicators like trust and brand image
- There is dominating motivators and price convenience

Table 7:

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

Implications of Research

The survey shows that perceived quality, brand image and trust are the main drivers of women's online purchase intent and that price awareness, convenience and social effect are secondary. Social influence, perceived quality, trust and brand image.

CONCLUSION

In the West, in Uttar Pradesh, brand marketing is going to be a combination of technology, trust and regional branding in order to increase women's trust in digital shopping. The study aims at understanding the factors affecting women's e-shopping intention towards beauty products in western Uttar Pradesh by using structural equation modelling (SEM). The study reveals that trust, perceived quality and brand image are the most important factors that influence purchasing will, while social impact, convenience and price awareness also have a small but important influence. These results show the importance of psychological and sensory elements in driving the adoption of e-commerce, especially among semi-urban female consumer groups.

Moreover, social influence (refocusing on the increasing socialization of online cosmetics consumption) was identified as one of the key factors affecting behavioral intent via peer recommendations, influencer support and digital marketing. These results provide helpful recommendations for cosmetic companies and e-commerce platforms from a management perspective. In conclusion, this study contributes to the academic community and consumer behaviour analysis for online shopping by showing the crucial role of trust, perception of quality and social impact in shaping the online shopping intention of women in the developing market of western Uttar Pradesh.

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