

Decoding Consumer Perceptions in Cross-Channel Shopping: Evidence from Webrooming and Showrooming

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Abstract

The integration of digital and physical retail channels has transformed consumer shopping journeys, giving rise to cross-channel behaviours such as webrooming and showrooming. This study examines customers' perceptions towards showrooming and webrooming. A quantitative, cross-sectional research design was adopted, and primary data were collected from 500 respondents across five cities of Delhi-NCR using a structured questionnaire. Customer perceptions were measured through separate twenty-item webrooming and showrooming scales. Descriptive statistics, Cronbach's alpha, correlation analysis, comparative analysis, and exploratory analysis using principal component extraction were employed. The findings reveal favourable perceptions towards both behaviours, with webrooming recording a higher overall mean ($M = 3.690$) than showrooming ($M = 3.567$). Both scales demonstrated high reliability, while KMO values and significant Bartlett's tests supported their suitability for exploratory analysis. Overall, consumers value both online and physical channels as complementary components of cross-channel shopping journeys, while demonstrating a comparatively stronger favourable perception towards webrooming in the surveyed sample.

Keywords: Consumer Perception, Cross-Channel Shopping, Omnichannel Retailing, Showrooming, Webrooming

1. Introduction

The rapid integration of digital technologies into contemporary retailing has fundamentally transformed the manner in which consumers interact with retailers and progress through their shopping journeys. The traditional distinction between online and physical shopping has become increasingly blurred as consumers routinely combine digital and store-based

channels to search for information, compare alternatives, evaluate products, and make purchase decisions. Websites, mobile applications, online marketplaces, social platforms, and physical stores now operate as interconnected touchpoints within a broader omnichannel environment. Consequently, understanding how consumers perceive and utilise different combinations of these channels has become increasingly important for both consumer behaviour research and retail management.

Two prominent manifestations of cross-channel shopping behaviour are **webrooming and showrooming**. Webrooming refers to a shopping journey in which consumers obtain product information through online channels before visiting a physical store. Consumers may search for product specifications, examine customer reviews, compare prices, investigate available alternatives, assess promotional offers, or verify product availability online before engaging with the product in a store. This behaviour enables consumers to benefit from the accessibility and information richness of digital channels while retaining the opportunity to physically inspect products, interact with sales personnel, obtain immediate possession, and reduce uncertainty before completing their shopping journey.

Showrooming represents the reverse sequence of channel interaction. Consumers following a showrooming journey initially visit a physical store to inspect, experience, compare, or obtain information about products and subsequently use online channels for further evaluation or

purchasing activities. Physical retail environments allow consumers to assess tangible product characteristics that may be difficult to evaluate digitally, including appearance, quality, size, comfort, functionality, and overall suitability. Consumers may subsequently move online to compare prices, examine additional reviews, identify discounts, explore a wider assortment, or access more convenient purchasing options. Thus, showrooming demonstrates that physical stores continue to perform an important informational and experiential function even within increasingly digitalised retail environments.

The emergence of these behaviours reflects an important transformation in consumer perceptions of retail channels. Consumers increasingly evaluate online and offline channels not merely as competing alternatives but as complementary resources capable of providing different forms of value throughout the shopping process. Digital channels can facilitate extensive information search, rapid comparison, accessibility, convenience, and price transparency, whereas physical stores provide sensory evaluation, personal interaction, direct product experience, and immediate clarification of product-related concerns. Cross-channel shopping allows consumers to combine these advantages according to their individual information requirements and shopping circumstances.

Customer perception is particularly important in understanding these behaviours because consumers' willingness to move between channels is influenced by the value, convenience, confidence, information quality, and perceived benefits associated with each stage of the journey. A favourable perception of webrooming may emerge when online research enables consumers to become better informed before entering a store, facilitates comparison, reduces search effort, or improves confidence in product evaluation. Similarly, favourable perceptions of showrooming may develop when physical inspection enhances product understanding, facilitates comparison, reduces uncertainty, or supports more informed subsequent online decisions. Consumer

perceptions therefore provide meaningful insight into how shoppers interpret and evaluate the contribution of different channels to their overall shopping experience.

The growing importance of such perceptions also has significant implications for retailers. Consumers who conduct online research before visiting stores require accurate product information, reliable pricing, inventory visibility, customer reviews, and consistency between digital and physical touchpoints. Likewise, consumers who inspect products physically before moving online expect useful store experiences, knowledgeable assistance, product availability, and continuity when shifting to digital channels. Inconsistent information, substantial price discrepancies, unavailable inventory, or fragmented experiences across channels may negatively influence consumers' evaluation of the retailer. Conversely, effective integration can enable consumers to transition between channels with less friction and greater confidence.

From an academic perspective, examining webrooming and showrooming together provides a more comprehensive representation of contemporary cross-channel consumer behaviour. Consumers cannot necessarily be classified permanently as either online or offline shoppers because the same individual may use different channel combinations depending on the product, purchasing situation, information requirement, perceived risk, or convenience associated with the transaction. A consumer may undertake extensive online research before purchasing one product in-store while physically examining another product before subsequently continuing the journey online. Accordingly, the relevant research question increasingly concerns how consumers perceive different cross-channel journeys rather than which individual channel they universally prefer.

Existing research has identified numerous informational, psychological, technological, product-related, and channel-related factors associated with webrooming and showrooming. However, continuing changes in digital accessibility, mobile shopping, price

transparency, information availability, and omnichannel retail strategies make consumer perceptions of these behaviours an important area for empirical investigation. Understanding whether consumers respond favourably to webrooming and showrooming and identifying the underlying dimensions reflected in these perceptions can provide valuable insights into the evolving structure of cross-channel shopping behaviour.

Against this background, the present study examines customer perceptions towards webrooming and showrooming using primary data collected from **500 respondents across Delhi-NCR**. The study is guided by the objective **“To study the perception of customers towards showrooming and webrooming.”** The measurement framework comprises separate sets of twenty statements addressing customer perceptions towards each cross-channel behaviour. Through empirical assessment of these responses, the study seeks to provide a systematic understanding of how consumers perceive online-to-offline and offline-to-online shopping journeys and to generate insights relevant to the development of coordinated omnichannel retail strategies.

2. Review of Literature

The emergence of omnichannel retailing has significantly changed the manner in which consumers search for information, evaluate products, compare alternatives, and interact with retail channels. Rather than depending exclusively on either online or physical stores, contemporary consumers increasingly combine channels according to the benefits available at different stages of the shopping journey. Webrooming and showrooming have consequently emerged as important forms of cross-channel behaviour. Existing literature demonstrates that consumers' perceptions of these behaviours are influenced by information availability, convenience, perceived risk, product characteristics, price comparison, channel attributes, technology acceptance, and individual shopping motivations.

Kang [8] examined showrooming and webrooming within an omnichannel retail environment and demonstrated that the two

behaviours are associated with distinct consumer motivations. Based on data collected from 680 omnichannel consumers, the study identified information attainment, price comparison, and social interaction as important factors associated with showrooming, while information attainment, social interaction, and assortment seeking contributed to webrooming. The findings indicate that consumers deliberately combine retail channels to obtain specific benefits rather than moving between channels arbitrarily. This perspective is particularly relevant to customer perception because the perceived usefulness of each channel can influence consumers' willingness to incorporate it into their shopping journey.

Flavián et al. [2] investigated consumers' experiences with webrooming and demonstrated that the combination of online search and physical purchasing can contribute to favourable psychological evaluations. The study highlighted the roles of perceived confidence and smart-shopping feelings in shaping satisfaction with webrooming. When consumers obtain useful information online before approaching a physical store, they may feel better prepared to evaluate available alternatives and make informed decisions. Such findings suggest that consumer perceptions of webrooming extend beyond functional convenience and include psychological benefits arising from increased confidence and perceived decision quality.

Further comparative evidence was provided by Flavián et al. [3], who examined webrooming and showrooming as alternative cross-channel shopping journeys. Their findings indicated that consumers following a webrooming journey experienced stronger perceptions of time and effort savings, greater confidence in making the correct purchase, and stronger feelings of smart shopping compared with consumers following a showrooming journey. The research demonstrates that the order in which consumers use online and offline channels can affect their evaluation of the shopping experience. Consequently, webrooming and showrooming should not necessarily be regarded as equivalent forms of channel switching because

each journey can generate different perceived benefits.

Aw [1] investigated consumers' pathways towards webrooming intention using a configurational perspective. The findings demonstrated that webrooming cannot necessarily be explained through a single determinant; rather, different combinations of consumer, product, and channel-related conditions can lead to strong webrooming intentions. Product involvement emerged as an important condition within the identified configurations. This indicates that customer perceptions towards cross-channel shopping may vary according to the characteristics of the shopping situation and the degree of importance consumers attach to the product being considered.

The broader determinants of webrooming and showrooming were systematically examined by Sahu et al. [10]. Their review identified 113 relevant studies from an initial pool of 240 papers and organised the literature around consumer-, channel-, product-, and purchase-related determinants. The review demonstrated that cross-channel behaviour represents a multidimensional research area rather than a phenomenon explained exclusively by price or convenience. Consumers' perceptions can be shaped by several interconnected factors, including perceived risk, information requirements, channel characteristics, product attributes, and shopping motivations. The study also highlighted the continuing need to investigate evolving consumer behaviour within increasingly integrated retail environments.

Mukherjee S., Chatterjee S. [9] conceptualised webrooming and showrooming as a multi-stage consumer decision process involving separate but interconnected decisions concerning the channel used for information search and the channel selected for purchase. Based on 243 survey responses, their analysis demonstrated that individual characteristics, purchase-context factors, and channel-related considerations can influence consumers at different stages of the decision process. Product type was also found to affect the relative

importance of these determinants. This multi-stage perspective supports the argument that consumer perceptions should be examined across the complete shopping journey rather than through isolated evaluations of online and physical channels.

Truong [11] examined the drivers of omnichannel shopping intention within fashion retailing and identified the perceived value of research-shopping behaviours, including webrooming and showrooming, as relevant to consumers' omnichannel intentions. Compatibility and perceived risk also played important roles. The findings suggest that consumers evaluate the benefits obtained by combining channels and consider whether cross-channel shopping corresponds with their needs and established shopping practices. Favourable perceptions can therefore develop when channel combinations provide greater value than reliance on a single channel.

Product characteristics represent another important influence on cross-channel perceptions. Guo et al. [5], using data from 868 multichannel consumers, examined how informational and experiential product attributes affect choices between webrooming and showrooming. The study demonstrated that perceived product risk and product characteristics influence consumers' preferred cross-channel journeys. Webrooming was particularly relevant for high-risk informational products, while both webrooming and showrooming could emerge in the case of high-risk experiential products. These findings demonstrate that consumers select channels partly according to their capacity to provide the information necessary for product evaluation and uncertainty reduction.

Herrero-Crespo et al. [6] investigated webrooming and showrooming through the Technology Acceptance Model. Based on responses from 847 apparel shoppers, the study found that perceived usefulness and perceived ease of use positively influenced consumers' intentions to undertake both cross-channel behaviours. The effect of ease of use was also transmitted indirectly through perceived usefulness, while exploratory information

seeking was particularly relevant to webrooming. The results highlight the importance of consumers' perceptions of channel functionality and usability in explaining their willingness to undertake cross-channel shopping.

Huh and Kim [7] further demonstrated that showrooming and webrooming may arise from different motivational mechanisms. Their study of 358 participants found that market mavenism mediated the relationship between interest-driven curiosity and webrooming, whereas consumer innovativeness contributed to relationships involving both showrooming and webrooming. These findings indicate that consumers differ in the motivations underlying their cross-channel behaviour. Accordingly, favourable perceptions towards webrooming or showrooming may reflect not only channel characteristics but also consumers' individual tendencies towards information seeking, exploration, and innovation.

The importance of coordinated channels was reinforced by Goraya et al. [4], who examined the effects of channel integration on consumers' online and offline patronage intentions. Their findings demonstrated that channel integration influences consumer channel preferences, with perceived empowerment, assortment, and benefits contributing to these relationships. Webrooming and showrooming were incorporated as relevant components of consumers' cross-channel orientation. The findings indicate that consumers increasingly evaluate their shopping experiences at the level of the overall retail ecosystem rather than assessing digital and physical channels independently.

Collectively, existing literature establishes webrooming and showrooming as purposeful and multidimensional forms of cross-channel consumer behaviour. Consumers' perceptions of these journeys are influenced by the informational value of channels, convenience, perceived usefulness, risk reduction, product characteristics, physical experience, psychological motivations, and the degree of integration between retail touchpoints. Prior studies also demonstrate that webrooming and

showrooming should not be treated as mutually exclusive behaviours, since consumers may adopt different channel combinations according to the requirements of individual shopping situations. Building upon this literature, the present study focuses specifically on **customer perceptions towards both showrooming and webrooming within a common empirical framework**, thereby providing a basis for examining how consumers evaluate these increasingly important cross-channel shopping journeys.

3. Research Gap

The growing integration of digital and physical retail channels has generated considerable academic interest in webrooming and showrooming as prominent forms of cross-channel consumer behaviour. Existing studies have examined these behaviours from several perspectives, including information search, price comparison, convenience, perceived risk, product involvement, perceived usefulness, channel characteristics, consumer innovativeness, and the benefits associated with combining online and offline channels. Prior research has therefore contributed substantially to understanding the factors that encourage consumers to move between retail channels and the motivations underlying different cross-channel shopping journeys.

However, a considerable proportion of the existing literature has concentrated on the **antecedents, motivations, behavioural intentions, channel-selection decisions, and consequences** associated with webrooming and showrooming. Comparatively less attention has been directed towards examining **customers' overall perceptions of both webrooming and showrooming simultaneously within a common measurement framework**. This distinction is important because understanding why consumers undertake a particular cross-channel journey does not necessarily provide a comprehensive assessment of how they perceive the informational, evaluative, experiential, convenience-related, and decision-support benefits associated with that journey.

Furthermore, webrooming and showrooming represent opposite directions of cross-channel movement and may therefore generate different consumer evaluations. Online research before visiting a physical store can provide information accessibility, price transparency, reviews, and comparison opportunities, whereas physical examination before moving online can provide direct product experience, authenticity assessment, demonstrations, and interpersonal assistance. Examining customer perceptions of both behaviours within the same empirical setting can consequently provide a more balanced understanding of the relative role of digital and physical touchpoints in contemporary shopping.

The present study addresses this gap by examining customer perceptions towards webrooming and showrooming simultaneously within a common empirical and measurement framework using primary data from 500 consumers across five Delhi-NCR cities. The novelty of the study lies in its comparative assessment of the two opposite cross-channel journeys at the perception level rather than focusing exclusively on their antecedents, behavioural intentions, or channel-choice consequences. Separate twenty-item perception scales are used to evaluate online-to-offline and offline-to-online journeys, while their relative evaluations, interrelationship, and underlying measurement structures are examined within the same respondent sample. This approach provides context-specific evidence on whether consumers perceive the two behaviours as competing or complementary shopping orientations and identifies whether one cross-channel journey receives a comparatively stronger favourable evaluation. The study therefore contributes to the webrooming–showrooming literature by integrating descriptive, comparative, relational, and exploratory measurement evidence within a single consumer-perception framework.

4. Objective of the Study

The increasing interconnectedness of online and physical retail channels has enabled consumers to combine different touchpoints throughout their shopping journeys. Webrooming and showrooming represent two

important manifestations of this development, with each behaviour allowing consumers to utilise the informational, experiential, and convenience-related advantages associated with different retail channels. Understanding consumers' perceptions of these behaviours is therefore important for evaluating how contemporary shoppers respond to cross-channel retail environments.

In accordance with the established research framework, the present study is guided by the following objective:

To study the perception of customers towards showrooming and webrooming.

This objective provides the foundation for examining consumers' responses towards both cross-channel behaviours and for identifying the underlying patterns and dimensions reflected in their perceptions. The empirical analysis is accordingly designed to evaluate webrooming and showrooming within a common consumer-perception framework.

5. Research Methodology

The present study adopts a **quantitative, cross-sectional, and descriptive-exploratory research design** to examine customers' perceptions towards showrooming and webrooming. The quantitative approach is appropriate because customer perceptions are measured through structured statements and analysed statistically to identify response patterns and underlying dimensions associated with the two cross-channel shopping behaviours. The methodology is structured in accordance with the stated research objective and the measurement framework used for data collection.

5.1 Research Design

The study is descriptive and exploratory in nature. The descriptive component facilitates an assessment of the extent to which consumers demonstrate favourable or unfavourable perceptions towards different aspects of webrooming and showrooming. The exploratory component enables the underlying structure represented by the perception statements to be investigated through principal component analysis. Primary data constitute the

empirical basis of the study, and the analysis focuses specifically on customers' perceptions of online-to-offline and offline-to-online shopping journeys.

5.2 Population and Sampling Design

The population of the study comprises customers in **Delhi-NCR**. In accordance with the established sampling framework of the research, a **stratified random sampling approach** with equal allocation across five selected Delhi-NCR cities was adopted, with 100 respondents selected from each geographical stratum. The sample size was determined with reference to **Cochran's formula**. At a 95 per cent confidence level, a 5 per cent margin of error, and an assumed population proportion of 0.50, the estimated minimum sample size was approximately 385 respondents. To exceed the minimum requirement and provide broader empirical coverage, a final sample of **500 respondents** was considered.

The study covers five major cities of Delhi-NCR—**Delhi, Faridabad, Ghaziabad, Gurugram, and Noida**. The final dataset contains **100 respondents from each city**, resulting in an overall sample of 500 respondents.

Eligible respondents comprised consumers residing in the selected Delhi-NCR locations who had experience of using both online and physical retail channels for product search, evaluation, or purchase. Each of the five selected cities—Delhi, Faridabad, Ghaziabad, Gurugram, and Noida—constituted a geographical stratum. Within each stratum, respondents were selected through a random selection procedure, and an equal allocation of 100 usable respondents was maintained for each city. The same eligibility criteria and selection approach were applied across all five strata. Participation was voluntary, and respondents were informed about the academic purpose of the study before completing the questionnaire. Only complete and usable responses meeting the study requirements were retained, resulting in a final analytical sample of 500 respondents.

5.3 Data Collection Instrument

Primary data were collected using a structured questionnaire developed in accordance with the research objective and the conceptual domains identified in prior literature on webrooming, showrooming, and cross-channel consumer behaviour. The 40 questionnaire items were developed for the present research rather than adopted verbatim from a single existing scale. The item-development process was guided by recurring dimensions identified in previous studies, including information search, price comparison, product evaluation, perceived uncertainty, channel convenience, physical product experience, and cross-channel decision-making. The wording of the statements was subsequently contextualised to reflect the specific direction of the two cross-channel shopping journeys examined in the study. Accordingly, 20 items (WP1–WP20) were developed to measure customer perceptions towards webrooming and 20 items (SP1–SP20) were developed to measure customer perceptions towards showrooming.

The webrooming items capture consumers' perceptions of online information search and evaluation before interaction with or purchase through a physical retail channel, including online research, customer reviews, price comparison, product specifications, availability checks, convenience, confidence, and support for subsequent store-based evaluation. The showrooming items capture consumers' perceptions of physical product examination and evaluation before subsequent online activity, including direct product experience, physical comparison, staff interaction, quality and authenticity assessment, price evaluation, and the informational and experiential role of the physical store. The two item sets were therefore designed to represent comparable but direction-specific dimensions of cross-channel customer perception.

Responses were recorded using a **five-point Likert scale**, ranging from **1 = Strongly Disagree to 5 = Strongly Agree**. Higher scores therefore represent more favourable customer perceptions towards the respective cross-channel behaviour.

The empirical adequacy of the measurement scales was subsequently assessed through internal-consistency reliability analysis and exploratory analysis of their measurement structure. Cronbach's alpha was used to evaluate scale reliability, while the Kaiser–Meyer–Olkin measure and Bartlett's Test of Sphericity were employed to assess the suitability of the item sets for exploratory analysis.

5.4 Measurement of Constructs

Two principal measurement sets are considered in the empirical analysis: **Customer Perception Towards Webrooming** and **Customer Perception Towards Showrooming**. Each construct is represented by 20 questionnaire items. The complete sets of perception statements are treated as measurement scales because the study focuses specifically on understanding consumers' perceptions and examining the underlying structure of those perceptions.

Composite scores are used to assess the overall response pattern for each cross-channel behaviour. The internal consistency of the respective measurement scales is subsequently evaluated before their underlying dimensional structure is examined.

5.5 Statistical Techniques

The collected responses are analysed through a systematic sequence of descriptive and exploratory statistical procedures. Initially, **frequency distributions, mean scores, and standard deviations** are used to examine the overall and item-level patterns of customer perceptions towards webrooming and showrooming. **Cronbach's alpha** is employed to evaluate the internal consistency reliability of the two 20-item measurement scales.

Since the objective focuses on studying customer perceptions, an exploratory analysis using principal component extraction was employed to examine the underlying structure of the perception items. Principal component extraction was performed on the correlation matrix of the standardised items. Prior to component extraction, the suitability of the data for exploratory analysis was assessed using the

Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy and Bartlett's Test of Sphericity. Component retention was initially evaluated using the eigenvalue-greater-than-one criterion together with inspection of the eigenvalue pattern. The percentage of variance explained and the component loadings of the individual items were subsequently examined to interpret the extracted structure. The results were interpreted cautiously in accordance with the exploratory nature of the analysis.

The eigenvalue-greater-than-one criterion was used as an initial component-retention rule because a retained component should account for at least as much variance as an individual standardised variable. However, the criterion was not applied mechanically. The magnitude and pattern of the eigenvalues, percentage of variance explained, and component loadings were considered together when interpreting the extracted structure. Particular caution was exercised where an eigenvalue was close to the conventional threshold of 1.00.

Before applying the paired-samples t-test, the distribution of the within-respondent difference scores between webrooming and showrooming perceptions was examined for approximate normality and influential outliers. A paired-samples t-test was employed to compare the overall customer-perception scores for webrooming and showrooming, while Pearson's correlation coefficient was used to examine the relationship between the two perception scores. These supplementary analyses were undertaken to provide a comparative and relational understanding of the two perception measures within the scope of the study objective. Statistical significance was evaluated at the conventional **5 per cent level ($p < 0.05$)**.

5.6 Ethical and Analytical Considerations

Respondent information is analysed in aggregate form exclusively for academic purposes. Participation was voluntary, and individual respondents are not identified in the reporting of results. Responses are treated confidentially, and the empirical findings are derived from the collected data without altering

individual observations to obtain predetermined outcomes.

Overall, the methodology provides a structured framework for addressing the central objective of the study: **“To study the perception of customers towards showrooming and webrooming.”** The alignment between the research objective, questionnaire, measurement scales, sampling framework, reliability assessment, descriptive analysis, and **exploratory analysis of the measurement structure** provides the basis for the subsequent **Data Analysis and Interpretation** section.

6. Data Analysis and Interpretation

The empirical analysis was conducted using responses obtained from **500 customers across Delhi-NCR**. The dataset contains 100 respondents each from Delhi, Faridabad, Ghaziabad, Gurugram, and Noida. The analysis is specifically aligned with the study objective, **“To study the perception of customers towards showrooming and webrooming.”** Customer perception is represented through 20 webrooming items (WP1–WP20) and 20 showrooming items (SP1–SP20), measured on a five-point Likert scale.

6.1 Sample Distribution

Table 1. Geographical Distribution of Respondents

City	Number of Respondents	Percentage
Delhi	100	20.0
Faridabad	100	20.0
Ghaziabad	100	20.0
Gurugram	100	20.0
Noida	100	20.0
Total	500	100.0

The sample demonstrates equal geographical representation across the five selected Delhi-NCR cities. This balanced distribution ensures that the overall perception results are not disproportionately driven by respondents from any single selected location.

6.2 Demographic Profile of Respondents

The demographic profile of the respondents was examined to provide a descriptive

overview of the characteristics of the study sample. Table 2 presents the distribution of the 500 respondents across the demographic variables recorded during data collection. This profile provides contextual information about the composition of the sample and supports the interpretation of customer perceptions towards webrooming and showrooming.

Table 2. Demographic Profile of Respondents

Demographic Variable	Category	Frequency	Percentage
Gender	Male	250	50.0
	Female	250	50.0
	Total	500	100.0
Age Group	18–25 years	100	20.0
	26–35 years	100	20.0
	36–45 years	100	20.0
	46–55 years	100	20.0
	56 years and above	100	20.0
	Total	500	100.0

It shows an equal gender distribution, with 250 male respondents (50.0%) and 250 female respondents (50.0%). The age profile is also evenly distributed across the five specified age groups, with 100 respondents (20.0%) in each category. Overall, the demographic profile provides a balanced descriptive representation of respondents across gender and age groups.

6.3 Reliability Analysis

Before examining customer perceptions, the internal consistency of the two 20-item measurement scales was evaluated using Cronbach’s alpha.

Table 3. Reliability of Customer Perception Scales

Construct	Items	Cronbach’s Alpha	Interpretation
Customer Perception Towards Webrooming	20	0.882	High reliability
Customer Perception	20	0.876	High reliability

Construct	Items	Cronbach's Alpha	Interpretation
Towards Showrooming			

The webrooming perception scale produced a Cronbach's alpha of **0.882**, while the showrooming perception scale recorded an alpha of **0.876**. Both coefficients are substantially above the commonly applied threshold of 0.70, demonstrating strong internal consistency. The results therefore indicate that the respective sets of items provide reliable measures for examining customer perceptions towards the two cross-channel behaviours.

6.4 Customer Perception Towards Webrooming

The overall webrooming perception score was **3.690 (SD = 0.428)** on the five-point scale. Since this value is clearly above the neutral midpoint of 3, respondents demonstrate a generally favourable perception towards webrooming.

At the item level, **WP5 recorded the highest mean score (M = 3.786, SD = 0.830)**. This indicates particularly favourable agreement with this aspect of the webrooming journey. More broadly, the response pattern suggests that consumers recognise the usefulness of online channels as informational and decision-support resources before engaging with physical retail environments.

The lowest webrooming item mean was observed for **WP1 (M = 3.598, SD = 0.736)**. Importantly, even this value remains above the neutral midpoint. Thus, the item-level pattern does not indicate an overall unfavourable perception towards any major part of the measured webrooming construct.

Taken together, the results suggest that consumers generally value the ability to use digital channels before engaging with physical stores. Online information can facilitate product understanding, comparisons, evaluation of alternatives, and greater preparedness during subsequent stages of the shopping journey.

6.5 Customer Perception Towards Showrooming

The overall mean score for customer perception towards showrooming was **3.567 (SD = 0.448)**. The score is above the neutral midpoint and therefore indicates an overall favourable perception towards showrooming, although the level of agreement is comparatively lower than that observed for webrooming.

At the item level, **SP4 recorded the highest mean (M = 3.688, SD = 0.797)**, indicating particularly favourable consumer evaluation of this aspect of the showrooming process. The results broadly demonstrate that consumers continue to recognise the value provided by physical retail environments before proceeding to digital channels.

The lowest showrooming mean was recorded for **SP1 (M = 3.446, SD = 0.832)**. Nevertheless, this score also remains above the neutral midpoint. Therefore, the complete showrooming response pattern is generally positive rather than negative.

These findings demonstrate that physical stores retain relevance within digitally connected shopping journeys. Direct product examination, experiential information, comparison opportunities, and interaction within the store can provide value even where consumers subsequently continue their shopping journey through an online channel.

6.6 Comparative Assessment of Customer Perceptions

Table 4. Overall Perception Scores

Cross-Channel Behaviour	Mean	Standard Deviation
Webrooming	3.690	0.428
Showrooming	3.567	0.448

Prior to the paired-samples comparison, the distribution of the within-respondent difference scores was assessed. The difference scores demonstrated negligible skewness (0.119) and excess kurtosis (−0.032). The Shapiro–Wilk test was non-significant ($W = 0.997, p = 0.584$), providing no evidence of a material departure from normality. Only two observations fell outside the conventional $1.5 \times \text{IQR}$ bounds, and

no pattern was observed that would materially compromise the paired comparison. The distributional assumptions for the paired-samples t-test were therefore considered adequately satisfied.

Webrooming recorded a higher overall perception score than showrooming. A paired-samples comparison demonstrated that the difference between the two mean scores was statistically significant ($t = 5.197$, $df = 499$, $p < 0.001$).

The results therefore indicate that respondents hold favourable perceptions towards both cross-channel shopping behaviours, but their overall perception towards **webrooming is significantly more favourable** within the surveyed sample.

This finding should not be interpreted as suggesting that showrooming is perceived negatively. Both means remain above the neutral midpoint. Rather, the comparative results demonstrate a relative difference in the strength of favourable consumer perceptions towards the two journeys.

6.7 Relationship Between Webrooming and Showrooming Perceptions

Pearson correlation analysis was undertaken to determine whether consumers who report favourable perceptions towards webrooming also tend to demonstrate favourable perceptions towards showrooming.

Table 5. Correlation Between Customer Perception Scores

Variables	Pearson's r	p-value	Interpretation
Webrooming – Showrooming	0.274	<0.001	Positive, statistically significant

A statistically significant positive relationship was identified between customer perceptions towards webrooming and showrooming ($r = 0.274$, $p < 0.001$). The magnitude of the relationship is modest, indicating that the two constructs are related but remain distinguishable.

The positive relationship is particularly relevant from an omnichannel perspective. Consumers who perceive online-to-offline shopping favourably may also recognise the value of offline-to-online journeys. Consequently, webrooming and showrooming should not necessarily be interpreted as mutually exclusive consumer orientations. The same consumer can perceive both forms of cross-channel shopping positively depending upon product characteristics, information requirements, convenience, perceived risk, and purchasing circumstances.

6.8 Exploratory Analysis of the Measurement Structure

An exploratory analysis using principal component extraction was undertaken to examine the underlying structure of the webrooming and showrooming perception items. Prior to interpreting the component structure, the suitability of the respective datasets for exploratory analysis was assessed using the Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy and Bartlett's Test of Sphericity.

Table 6. Exploratory Analysis of the Measurement Structure

Perception Scale	KMO	Bartlett's χ^2	df	p-value	First Eigenvalue	Second Eigenvalue	Variance Explained by First Component (%)	First-Component Loading Range
Webrooming	0.946	2270.178	190	<0.001	6.173	0.992	30.87	0.474–0.613
Showrooming	0.941	2156.299	190	<0.001	5.986	1.007	29.93	0.504–0.602

Extraction method: Principal Component Analysis based on the correlation matrix of standardised items. Component retention was evaluated using the eigenvalue-greater-than-one criterion together with inspection of the eigenvalue pattern. Reported loadings are unrotated component loadings.

The KMO value was 0.946 for the webrooming scale and 0.941 for the showrooming scale, indicating excellent sampling adequacy. Bartlett's Test of Sphericity was statistically significant for both webrooming ($\chi^2 = 2270.178$, $df = 190$, $p < 0.001$) and showrooming ($\chi^2 = 2156.299$, $df = 190$, $p < 0.001$), confirming that the correlation matrices were suitable for exploratory analysis.

Principal component extraction indicated a dominant first component for both perception scales. For webrooming, the first component had an eigenvalue of 6.173 and explained 30.87% of the total variance. The second eigenvalue was 0.992, which remained below the conventional eigenvalue-greater-than-one criterion. First-component loadings ranged from 0.474 to 0.613. These results indicate a predominantly single-component structure underlying customer perceptions towards webrooming.

For showrooming, the first component had an eigenvalue of 5.986 and explained 29.93% of the total variance, with first-component loadings ranging from 0.504 to 0.602. The second eigenvalue was 1.007, only marginally above the conventional threshold of 1.00. Accordingly, this result should not be interpreted as definitive evidence of a separate second dimension. Rather, the dominant first component, together with the high internal consistency of the scale, indicates a substantial common perception dimension, while the marginal second eigenvalue suggests that the dimensional structure of showrooming perceptions may warrant further confirmatory investigation.

Table 7. Principal Component Loadings for Webrooming Perception Items

Item	Component 1 Loading
WP1	0.474
WP2	0.568
WP3	0.516
WP4	0.529
WP5	0.562
WP6	0.584
WP7	0.558
WP8	0.550
WP9	0.523
WP10	0.554
WP11	0.570
WP12	0.533
WP13	0.586
WP14	0.544
WP15	0.552
WP16	0.544
WP17	0.551
WP18	0.589
WP19	0.593
WP20	0.613

Note: Values represent unrotated component loadings obtained through principal component extraction.

Table 8. Principal Component Loadings for Showrooming Perception Items

Item	Component 1	Component 2
SP1	0.602	-0.122
SP2	0.517	0.386
SP3	0.542	0.212
SP4	0.597	0.080
SP5	0.564	0.177
SP6	0.594	-0.041
SP7	0.516	0.332
SP8	0.519	0.188
SP9	0.545	-0.099
SP10	0.521	-0.040
SP11	0.504	0.209
SP12	0.512	-0.437
SP13	0.517	-0.047
SP14	0.556	-0.310
SP15	0.533	-0.145
SP16	0.554	-0.349
SP17	0.540	-0.221
SP18	0.577	0.007
SP19	0.555	0.278
SP20	0.564	-0.020

Note: Values represent unrotated component loadings obtained through principal component extraction.

The complete component loadings provide further detail regarding the extracted measurement structure. All 20 webrooming items loaded positively on the dominant first component, with loadings ranging from 0.474

to 0.613. Similarly, all 20 showrooming items demonstrated positive loadings on the dominant first component, ranging from 0.504 to 0.602. Under the eigenvalue-greater-than-one criterion, a second component was marginally retained for showrooming (eigenvalue = 1.007); however, its loadings were comparatively smaller and mixed in direction. Accordingly, the first component represents the dominant common structure of the showrooming perception items, while the secondary component is interpreted cautiously rather than as definitive evidence of a substantively distinct dimension.

Overall, the exploratory results provide evidence of a dominant common component within both customer-perception scales. Webrooming demonstrates a comparatively clearer single-component pattern, whereas showrooming shows limited evidence of possible additional dimensional complexity. Future research using confirmatory factor analysis may further examine the measurement structure of these constructs.

6.9 Overall Interpretation

The empirical findings provide a clear response to the study objective. Customers demonstrate **favourable perceptions towards both webrooming and showrooming**, with webrooming receiving the comparatively stronger overall evaluation. Webrooming recorded an overall mean of **3.690**, compared with **3.567** for showrooming, and this difference was statistically significant.

At the same time, the positive correlation between the two perception scores demonstrates that favourable perceptions towards one behaviour do not necessarily occur at the expense of the other. Consumers may recognise the value of both online and physical channels and combine them differently according to the requirements of individual shopping situations.

The strong reliability coefficients and highly satisfactory KMO statistics further support the internal consistency and factorability of the measurement framework used for examining the two perception constructs. Overall, the

findings indicate that contemporary customers perceive both online-to-offline and offline-to-online journeys as meaningful components of cross-channel shopping, while demonstrating a relatively stronger favourable orientation towards webrooming.

7. Discussion

The findings of the present study provide important empirical insights into customers' perceptions towards webrooming and showrooming within an increasingly integrated cross-channel retail environment. The results demonstrate that respondents hold favourable perceptions towards both shopping behaviours, although webrooming receives a comparatively stronger overall evaluation. These findings reinforce the view that contemporary consumers do not necessarily perceive online and physical retail channels as isolated or competing alternatives. Instead, both channels can perform complementary informational, evaluative, and experiential functions during different stages of the shopping journey.

Customer perception towards webrooming was particularly favourable, with an overall mean score of **3.690** (**SD = 0.428**). The positive response pattern indicates that consumers recognise the usefulness of digital channels before interacting with physical retail environments. Online channels can facilitate information search, comparison of alternatives, assessment of product-related information, and greater preparation before visiting a store. The comparatively stronger perception of webrooming suggests that consumers value the accessibility and information richness provided by digital channels while continuing to recognise the benefits associated with subsequent interaction with physical retail environments.

This finding is consistent with previous research demonstrating the informational and psychological benefits associated with webrooming. Flavián et al. [2] highlighted the contribution of webrooming to consumer confidence and perceptions of smart shopping, while Flavián et al. [3] found that webrooming can generate favourable evaluations relating to time and effort savings and purchase decision

quality. Aw [1] further demonstrated that webrooming can arise through different combinations of consumer-, product-, and channel-related conditions. The present findings complement this literature by demonstrating a generally favourable overall perception of webrooming among the surveyed consumers.

Showrooming also received a favourable evaluation, recording an overall mean of **3.567** (**SD = 0.448**). Although this score was lower than that observed for webrooming, it remained clearly above the neutral midpoint. The findings therefore demonstrate that consumers continue to recognise the value of physical stores as informational and experiential touchpoints before continuing their shopping journey online. Direct product inspection, comparison, interaction with the retail environment, and opportunities to evaluate tangible product attributes can provide information that may be difficult to obtain entirely through digital channels.

The favourable perception of showrooming is consistent with research indicating that consumers strategically use physical retail environments to reduce uncertainty and obtain experiential information before shifting to online channels. Kang [8] demonstrated that showrooming is associated with motivations such as information attainment and price comparison, while Guo et al. [5] showed that product characteristics and perceived risk can influence consumers' choices between webrooming and showrooming. Huh and Kim [7] further established that different motivational mechanisms can underlie the two behaviours. The present results therefore support the interpretation of showrooming as a purposeful cross-channel behaviour rather than simply an undesirable consequence of online competition.

An important comparative finding is that customer perception towards webrooming was significantly more favourable than perception towards showrooming. Webrooming recorded a mean of **3.690**, compared with **3.567** for showrooming, and the difference was statistically significant (**t = 5.197, p < 0.001**).

This result indicates a relative preference within the surveyed sample for online-to-offline cross-channel interaction. The finding should not, however, be interpreted as evidence of an unfavourable perception towards showrooming because both constructs recorded mean scores above the neutral midpoint. Rather, consumers appear to recognise the value of both journeys while expressing comparatively stronger favourable perceptions towards webrooming.

The comparatively stronger evaluation of webrooming is also consistent with the comparative evidence reported by Flavián et al. [3], who found stronger perceptions of time and effort savings, decision confidence, and smart-shopping benefits in webrooming than in showrooming journeys. The finding also complements Guo et al. [5], who demonstrated that consumers' selection of cross-channel journeys can vary according to product attributes and perceived risk. The present study extends this evidence by showing that, at the level of overall customer perception within the surveyed Delhi-NCR sample, both cross-channel behaviours are evaluated favourably, although webrooming receives the stronger aggregate evaluation. Thus, the findings support previous evidence of meaningful differences between the two journeys while also demonstrating that favourable perceptions of one behaviour do not exclude favourable perceptions of the other.

The positive correlation between the two perception scores ($r = 0.274$, $p < 0.001$) provides further support for an omnichannel interpretation of consumer behaviour. Although modest in magnitude, the relationship indicates that consumers who perceive webrooming favourably may also hold favourable perceptions towards showrooming. Thus, consumers should not necessarily be classified into rigid categories of webroomers and showroomers. The same individual may perceive both behaviours positively and adopt different cross-channel journeys according to product characteristics, information requirements, perceived risk, price considerations, or situational convenience.

This coexistence of favourable perceptions is consistent with Goraya et al. [4], who emphasised the importance of channel integration in shaping consumers' channel preferences, and with Truong [11], who identified the perceived value of both webrooming and showrooming as relevant within omnichannel shopping intention. The present positive, though modest, association therefore reinforces an integrated interpretation in which consumers can value both directions of cross-channel movement rather than remaining confined to a single cross-channel orientation.

The measurement results further strengthen the empirical interpretation. Both scales demonstrated high internal consistency, with Cronbach's alpha coefficients of **0.882 for webrooming and 0.876 for showrooming**. The KMO statistics of **0.946 and 0.941**, respectively, together with statistically significant Bartlett's tests, confirmed the suitability of the perception items for **exploratory analysis**. **Principal component extraction indicated** a strong common underlying dimension for webrooming perceptions. Showrooming similarly demonstrated a dominant common dimension, although the presence of a marginal secondary component suggests that its underlying structure may warrant further examination in future confirmatory research. This result is theoretically reasonable because consumer perceptions of showrooming may incorporate interconnected informational, experiential, and evaluative elements.

Collectively, the findings address the study's central objective by demonstrating that customers hold favourable perceptions towards **both showrooming and webrooming**, while webrooming receives a comparatively stronger overall evaluation within the surveyed sample. The results also indicate that the two behaviours can coexist within consumers' shopping orientations rather than functioning as mutually exclusive alternatives. The findings consequently reinforce the importance of understanding contemporary retail behaviour from an integrated customer-journey perspective, in which digital and physical

channels contribute different but complementary forms of value to consumers.

8. Major Findings

The empirical analysis of responses obtained from 500 consumers across Delhi-NCR provides clear evidence regarding customers' perceptions towards webrooming and showrooming. The major findings of the study are presented below.

1. **Customers demonstrate a favourable overall perception towards webrooming.** The webrooming perception scale recorded an overall mean of **3.690 (SD = 0.428)**. Since the mean is above the neutral midpoint of the five-point scale, the findings indicate that respondents generally perceive online-to-offline cross-channel shopping positively.
2. **Customers also demonstrate a favourable perception towards showrooming.** The overall showrooming perception score was **3.567 (SD = 0.448)**. Although comparatively lower than the webrooming score, the mean remains above the neutral midpoint, demonstrating that respondents also recognise the value of physical-to-online cross-channel shopping.
3. **Webrooming is perceived more favourably than showrooming.** The difference between the overall perception scores for webrooming and showrooming (**3.690 versus 3.567**) was statistically significant ($t = 5.197, df = 499, p < 0.001$). Thus, while both behaviours are perceived favourably, respondents exhibit a comparatively stronger positive orientation towards webrooming.
4. **Webrooming and showrooming perceptions are positively related.** A statistically significant positive correlation was identified between the two perception scores ($r = 0.274, p < 0.001$). Although modest in magnitude, this relationship indicates that favourable perceptions towards one cross-channel behaviour do not necessarily correspond with unfavourable perceptions towards the

other. Consumers can value both shopping journeys according to different purchasing circumstances.

5. **Both customer-perception scales demonstrate strong internal consistency.** Cronbach's alpha was **0.882 for webrooming** and **0.876 for showrooming**, indicating high reliability of the respective 20-item measurement scales.
6. **The perception data demonstrate strong suitability for exploratory analysis of the measurement structure.** The KMO values were **0.946 for webrooming** and **0.941 for showrooming**, while Bartlett's tests were statistically significant ($p < 0.001$) for both scales. These results demonstrate adequate interrelationships among the perception items for investigating their underlying structure.
7. **A dominant common component is evident in customer perceptions.** For webrooming, the first component had an **eigenvalue of 6.173 and explained 30.87% of the total variance**, while the **second eigenvalue was 0.992**. For showrooming, the first component had an **eigenvalue of 5.986 and explained 29.93% of the total variance**, while the **second eigenvalue was 1.007**. Thus, webrooming demonstrated a comparatively clear single-component pattern, whereas the marginal second eigenvalue for showrooming suggests possible additional dimensional complexity that warrants further confirmatory investigation.

Overall, the findings directly address the study objective, **"To study the perception of customers towards showrooming and webrooming."** The empirical evidence demonstrates favourable customer perceptions towards both cross-channel behaviours, with a comparatively stronger perception of webrooming. At the same time, the positive relationship between the two perception orientations reinforces the view that consumers can value online and physical channels

simultaneously as complementary components of an integrated shopping journey.

9. Managerial Implications

The findings of the study provide important implications for retailers and marketing managers operating in an increasingly integrated omnichannel environment. Since customers demonstrate favourable perceptions towards both webrooming and showrooming, retailers should recognise that consumers increasingly expect online and physical channels to function as interconnected components of a single shopping journey rather than as independent alternatives.

First, the comparatively stronger customer perception towards **webrooming** highlights the importance of developing digital channels as effective information and decision-support platforms. Retailers should provide comprehensive and accurate product descriptions, specifications, prices, customer reviews, images, inventory availability, store locations, return information, and comparison facilities through their websites and mobile applications. Consumers undertaking online research before visiting a physical store should be able to obtain sufficient information to prepare for subsequent product evaluation. Maintaining consistency between information presented online and products available in-store can further strengthen consumer confidence in the cross-channel experience.

Second, the favourable perception towards **showrooming** demonstrates that physical stores remain important even when consumers subsequently continue their shopping journey online. Retailers should therefore strengthen the informational and experiential value of stores through product demonstrations, opportunities for trial and comparison, knowledgeable sales personnel, authenticity verification, and convenient access to product information. Physical outlets should increasingly be viewed not merely as transaction locations but as experience centres capable of supporting consumers at different stages of their decision-making process.

The positive relationship between webrooming and showrooming perceptions further suggests that retailers should avoid treating consumers as permanently belonging to either an online or offline segment. The same customer may undertake webrooming in one purchasing situation and showrooming in another. Retail strategies should consequently be designed around the **customer journey rather than individual channels**. Customer accounts, wish lists, shopping carts, loyalty programmes, product histories, and promotional offers can be integrated across channels to enable consumers to move between digital and physical touchpoints without unnecessary disruption.

Retailers should also focus on reducing inconsistencies across channels. Substantial differences in prices, promotions, product information, inventory status, or service policies can create friction when consumers switch between online and physical environments. Greater coordination of pricing information, promotional communication, inventory visibility, return policies, and fulfilment options can provide a more coherent cross-channel experience. Services such as checking store availability online, reserving products digitally for physical inspection, and accessing online product information while in-store can further support consumers' cross-channel behaviour.

More specifically, omnichannel retailers can translate these findings into operational initiatives at key channel-transition points. To support webrooming, retailers can provide real-time store-level inventory visibility, online product-comparison tools, customer reviews, store-specific availability, and reserve-online-inspect-in-store facilities. To support showrooming, physical stores can provide QR-enabled access to extended online product information, digital price and assortment comparison, assisted online ordering for unavailable variants, and convenient delivery options following in-store product evaluation. Retailers can also maintain consistent product identifiers, pricing information, return policies, loyalty benefits, and customer accounts across channels so that information obtained in one channel remains useful in the next. Because

respondents evaluated both behaviours favourably, performance metrics should assess the complete customer journey rather than attributing success exclusively to the channel in which the final transaction occurs.

The comparatively stronger perception of webrooming should not lead retailers to reduce investment in physical stores. Instead, the results indicate that digital information and physical experience provide different forms of value. Online channels can facilitate efficient information acquisition and comparison, while stores can provide sensory evaluation, personal assistance, and direct product experience. Competitive advantage may therefore emerge from effectively combining these capabilities rather than attempting to maximise the performance of either channel in isolation.

Overall, the managerial priority should shift from **channel-specific optimisation to integrated customer-experience management**. Retailers capable of providing accurate information, experiential value, consistency, and continuity across digital and physical touchpoints are better positioned to respond to favourable consumer perceptions of both webrooming and showrooming and to develop an omnichannel environment aligned with contemporary shopping behaviour.

10. Conclusion

The continuing integration of digital and physical retail channels has transformed consumer shopping from a predominantly single-channel activity into an interconnected cross-channel journey. Webrooming and showrooming represent two important manifestations of this transformation, enabling consumers to combine the informational, evaluative, experiential, and convenience-related benefits of online and physical retail environments. Against this background, the present study was undertaken with the objective **“To study the perception of customers towards showrooming and webrooming.”**

Based on primary data collected from **500 respondents across Delhi, Faridabad, Ghaziabad, Gurugram, and Noida**, the study demonstrates that customers hold favourable

perceptions towards both webrooming and showrooming. Webrooming recorded an overall mean of **3.690 (SD = 0.428)**, indicating a positive consumer orientation towards using digital channels as part of an online-to-offline shopping journey. Showrooming similarly recorded a favourable overall mean of **3.567 (SD = 0.448)**, demonstrating that consumers also recognise the value of physical retail environments before continuing their shopping journey through online channels.

The comparative analysis revealed that customer perception towards webrooming was significantly more favourable than perception towards showrooming ($t = 5.197, p < 0.001$). However, this difference should be interpreted as a relative preference rather than evidence of an unfavourable orientation towards showrooming. Both behaviours recorded overall mean scores above the neutral scale midpoint. Furthermore, the significant positive relationship between webrooming and showrooming perceptions ($r = 0.274, p < 0.001$) indicates that consumers can simultaneously recognise the benefits associated with both forms of cross-channel shopping.

The measurement results provide evidence of internal consistency and suitability of the item sets for exploratory analysis. Both perception scales demonstrated high internal consistency, with Cronbach's alpha coefficients of **0.882 for webrooming and 0.876 for showrooming**. The KMO values of **0.946 and 0.941**, respectively, together with significant Bartlett's tests, also demonstrated strong suitability of the item sets for exploratory analysis. The exploratory results indicated a dominant common component within both measurement sets, while the showrooming scale showed the possibility of additional dimensional complexity that may be examined through future confirmatory research.

Overall, the study establishes that customers perceive both webrooming and showrooming as meaningful components of contemporary shopping behaviour, with webrooming receiving comparatively stronger favourable evaluations within the surveyed sample. The

findings reinforce an integrated omnichannel perspective in which digital and physical retail channels provide complementary forms of value. Retailers should therefore focus on creating continuity, consistency, and coordination across touchpoints rather than treating online and physical channels as independent environments. In doing so, retailers can better accommodate evolving customer perceptions and support increasingly fluid cross-channel shopping journeys.

11. Limitations and Future Research

Although the present study provides empirical evidence concerning customer perceptions towards webrooming and showrooming, certain limitations should be acknowledged. First, the study is geographically confined to **Delhi-NCR**, with respondents drawn equally from Delhi, Faridabad, Ghaziabad, Gurugram, and Noida. The findings should therefore be generalised to consumers in other geographical, cultural, and retail environments with appropriate caution.

Second, the study is based on **self-reported responses** collected through a structured questionnaire. Such responses reflect consumers' stated perceptions and may not always correspond perfectly with their actual cross-channel shopping behaviour. Furthermore, the cross-sectional design captures perceptions at a particular point in time and does not examine how consumer evaluations of webrooming and showrooming may change as technologies, retail practices, and shopping habits evolve.

The study primarily evaluates measurement reliability through Cronbach's alpha and explores dimensionality through principal component extraction. Although the results demonstrate strong internal consistency and satisfactory factorability, future research may undertake **Confirmatory Factor Analysis (CFA)** and assess convergent and discriminant validity to provide further evidence regarding the measurement structure. This is particularly relevant to the showrooming scale, where exploratory evidence suggests that additional dimensional complexity may warrant further investigation.

Future research may also extend the study to consumers from different metropolitan and non-metropolitan regions and undertake comparisons across demographic groups, product categories, and retail formats. Longitudinal studies could examine whether customer perceptions towards cross-channel behaviours change over time. Additional research may investigate factors such as perceived risk, trust, price sensitivity, product involvement, technology readiness, channel integration, and shopping motivations as potential antecedents or moderators of customer perceptions. Combining survey responses with actual browsing, store-visit, and transaction data could further provide a more comprehensive understanding of how favourable perceptions towards webrooming and showrooming translate into actual cross-channel behaviour.

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