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Evaluating Consumer Awareness and Behavioral Influence of Virtual Try-on Technology in Online Shopping

Sunamya Singh

singhsunamya@gmail.com

University of Delhi

Vanshika Tayal

Delhi Technological University

Mukul Khanna

Ramanujan College University of Delhi

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Abstract

Getting to do a trail has always been an integral part of our Indian shopping culture, from buying fruits to a dress or even a house we always like to experience it first, before buying. In this age of online shopping, we cannot physically try our product but thanks to advancements in technology we do have Virtual try ons (VTO) for this purpose. In this paper we have examined how the use of virtual tryouts while online shopping can influence consumers' decision of purchasing a product and their post purchase behaviour. We have collected data through online surveys using Google forms from 160 young adults residing in northern India for this study. In this paper, we used mean perception score and factor analysis, done using SPSS software, to analyses the responses and by doing this we found that VTO significantly improves purchase intention and reduces fit uncertainty, but technical performance, loading speed, and privacy concerns remain barriers. Integrating reliable, realistic VTO solutions can thus enhance consumer satisfaction, increase conversion rates, and lower product-return costs for Indian e-commerce platforms.

Introduction

Rapid technological advancements have metamorphosed the way consumers purchase the products and virtually trying it before buying. It allows the consumers to try the products in ways which were earlier impossible. Rapid pace of innovations allows firms for customization, providing personalized shopping features like virtually trying on the products before we make a decision to purchase them. Virtual try on technology (VTO) provides the users with the realistic experience of how the products would look on them increasing consumer satisfaction and reducing returns.VTO offers the wide range of product catalogs to consumers from different brands and different prices allowing for comparison and deeper exploration. It boosts consumer confidence and also results in increasing user engagement with the website. Augmented reality (AR) using 3D models is an advancement to traditional virtual try on (VTO) features offering a more realistic and accurate idea of the fitting of the product. Additionally, realism, accuracy, user convenience, accessibility and reducing uncertainty are major advantages that VTO feature using AR. VTO feature using AR usually works when it captures a live image or extracts the image from the device gallery. Furthermore, it analyzes the users features like face, shape, skin tone and body size and hence providing a more realistic and personalized experience.

Furthermore, this paper provides the insights into the benefits that VTO feature provides to consumers such as improving consumer’s satisfaction, and their shopping experience providing them nearly in store- try on experience even without visiting there and hence saving their time and cost. This study also analyzes the behavior of the consumers towards the firm incorporating VTO feature using AR into their store or website like consumers often buying from them allowing them contactless and more comfortable experience resulting in positive purchase behavior and hence reducing the uncertainty and returning of the product

Literature review

Adoption of VTO

Firmanda A.;et al.;(2022) stated that during Covid 19 pandemic where all events were cancelled the Batik artisans faced threat to their survival. Hence, Virtual Try on Technology was another possible way of running businesses of Batik artisans effectively and efficiently. The system was based on mobile phones so that users can have access to it anytime and anywhere. Hand gesture and face recognition, motion capture were major highlights. Users can virtually try the product before buying it. The accuracy test was conducted using Alpha testing. It was found that 97% hand gestures and 93% human motion were captured accurately. **Ghodhbani H.; et al.;(2022)** stated that Virtual Try on Technology is a notable innovation. The need for this arises when a consumer wants to purchase the product online and wants to try it before purchasing. They stated that Image based virtual try on is one of the best approaches to let consumers virtually try the products. He conducted deep analysis on the Fashion industry. Various challenges like outfit shape, pose, showcasing the texture of the cloth and logo etc were also discussed. However, this technology provides extensive opportunities for research. In a paper by Yadav K.C. (2023) it was found that VTO technology reduces the concerns related to fit uncertainty which is one of the main causes of product return by consumers, by addressing this issue VTO improved customer satisfaction which led to increase in loyalty. The study concluded that VTO technology has huge potential to transform trail experience in online shopping, however there is a need to raise awareness, employ a structural approach and improve VTO technology to encourage acceptance and widespread usage of VTO. **Parkash M.,et al., (2024)** interpreted the importance of Virtual Try on technology. It has changed the way the online fashion industry does its business. This paper states various factors like gesture recognition, covering hand gestures etc influencing consumer purchase. Computer vision and machine learning were also included. It was also stated that this technology has resulted in increasing interaction of consumers and their engagement during online shopping.

Realism and Accuracy

Chu H.C.et al. (2019) in their research paper exclusively provided the information about Cloud Service Framework for evaluating the designs of the product especially of Footwear's. They also uploaded the video clips of Feet motion. This Framework is an exceptionally great example of applications of AR. In the paper Bialkova S. et al. (2022), authors studied the relationship between AR experience and product knowledge, and found that utilitarian and hedonic values impact purchase experience and product knowledge, It was also revealed that interactivity, realism and user satisfaction significantly influence the overall purchase experience during online shopping in cosmetic industry. **Song w.; et al.;(2022)** deciphered that Virtual Try on System using Augmented Reality provides lucrative opportunities for research. They specifically conducted research on Virtual Try on Shoes. All the images that were clicked they used 6DOF of shoes. They also created a dataset named Diverse shoes. It portrays images from 80K videos. Their system was trial and tested on mobile phones for speed and accuracy. On testing it provided a speed of about 25 to 45 FPS. it was analyzed that the system performance was accurate and reliable. Islam T., et al. (2024) critically analyzed that virtual reality is gaining immense popularity especially in the Retail industry. It provides users with a realistic experience about how the product will look on them when they will actually carry or use it. In this paper they divided the models into three types: image based, multi pose and virtual try on model. Relationships and differences among these three were exclusively explained. However, they also talked about various challenges like problems regarding identification of faces, technical glitches and many others which still need to be solved to make it more effective. Sridevi V. et al. (2024) deciphered that Augmented Reality

and Internet of Things (IOT) are assembled together. Smart mirrors and sensors enabled shelves are two examples that allow consumers to Virtually Try On Products before purchasing. It also involves gathering people's data from physical surroundings providing them realistic experience. They also mentioned various obstacles like Data privacy and security concerns which on getting solved will make this technology more useful.

Decision Making

Zhang B (2018**)** stated that Virtual Try On Technology bridges the differences of ordinary online shopping. They conducted research on virtual try on glasses based on the IOS platform. SVM classifier and point alignment model was used for precise information. It was validated that trying on glasses using this technology makes consumer purchases easier and accurate. Zhang T. et al. (2019) in their study concluded that when doing online shopping consumers' purchase decision process is influenced by VTO through its utilitarian value, hedonic value and privacy risk factor, Also the perceived ease of use affects perceived usefulness of VTO. They also found that there was no significant difference in impact of VTO in online consumers' purchase decision process among different age groups and genders. In the study by Basegmez H. et al. (2022), it was found that VTO technology increases customers' purchase intention, with a significant amount of people wanting to use it again. also, two distinct user groups having different demographics were identified with different views on ease of use of VTO technology. **Pratama R A.: et al.;(2023)** scrutinize that Virtual Try on Technology is proven to be a useful technology especially in the cosmetic industry. They studied consumer experience of those who buy products online and virtually try on using shoppe application by consumers in Indonesia. Results proved that this technology has a positive effect on consumers' interest to buy the product through shoppe application, moreover it also has a positive effect on consumer decision to purchase. In a Study by Sekhri K. et al. (2024) it was analyzed from the data collected via survey on 238 Tunisian women that Augmented reality based VTO technology positively affects online consumer purchase intention. By focusing on perceived value as a key mediator in their study, authors found that perceived usefulness positively enhances perceived value while perceived intrusiveness negatively affects it. Authors suggested that business should focus on interactivity and informativeness of VTO and minimize its intrusiveness to enhance perceived value and purchase intention. Chen C., et al. (2024) culminated that Virtual Try On technology is a thoughtful innovation increasing consumer satisfaction and purchasing experiences. They specifically mentioned its impact on the fashion industry. They analyzed 69 articles and identified various key factors impacting consumer purchases like attitudes, media, symbolic gratification and many others, they also addressed various challenges relating to this. Overcoming all the challenges will make this technology more effective and useful. Gao Y.et al. (2025), conducted a study employing the SOR model on young Chinese consumers to find out the impact of AI powered Try-on technology on Impulsive buying intentions. The data collected via online survey from 366 respondents was analyzed through PLS method and the conclusion was derived that Impulsive buying behavior is positively influenced by the 4 core attributes of AI powered VTO technology (namely, visual vividness, interactive control, personalized configuration and ease of use) through mediating values and brand trust moderation.

Post Purchase

Hwangbo H. et al. (2020) did a study and it was revealed that the average sales per customer increased by 14000 won (13$ approx.) with the use of 3D VTO, the rate of returns were also decreased by 27% as users were able to filter out incorrect fits. Additionally, VTO increased convenience and enjoyment which contributed to increasing sales. Patnaik A. (2024) in their review paper concluded that VTO Technology can be extremely useful for online business due to its positive effect on consumer buying intention, VTO enable customer to try out the product before making the buying decision, this results in increased customer engagement and customer satisfaction leading to increase in sales and significant reduction in sales returns. Kavin A. et al (2024) concluded in their study that VTO reduces product return by addressing the problem related to product fit and style in online shopping in the fashion industry, VTO experience enhances consumer satisfaction which in turn leads to improved loyalty, as buyers feel more confident in their choices. For online business and marketers, implementing VTO can increase their market reach, improve sales, and foster more personalized shopping experience, ultimately leading to overall growth of business.

Objectives of the Current Study

1. The main aim of the study is to assess the awareness of the consumers of Virtual try on feature(VTO) using AR and analyzing their shopping profile.
2. To explore the various benefits of VTO features using AR like realistic experience increasing customer relationships and ultimately paves the way towards building brand loyalty.
3. To measure the impact of the factors like 3D models and capturing live images on users' purchasing intention, offering them innovative ways of visualizing and then purchasing the products.
4. It also aims to gain insights into the demographic features of the population.

Methodology

This section explains the methods used to collect and interpret the data. It also explains the rationale for the procedures and techniques used in the research paper. Maximum cautions have been taken to ensure that the methodology used conforms to the purpose and objectives of the research paper.

Research gaps in the field

This section highlights the significant research gaps and various obstacles that have been discovered while conducting the research.

1. Research in this domain remains limited. The impact of VTO on consumer buying decisions is understudied.
2. Researchers have focused on conducting research in developed countries having robust infrastructure facilities but this research focuses on developing countries like India.
3. Research on specific demographic attributes has not been conducted but this research conducts in-depth analysis of people at a young age.
4. Previous research has paid attention mainly to apparels industry but this research focuses on variety of items including apparel, footwear, cosmetics.

Design and dimension of questionnaire

Research Design: The study is qualitative in nature focusing on the perspectives and experiences of those who frequently shop online.

To collect primary data, a questionnaire was made keeping in mind the objectives of this research paper, the questionnaire was divided into 3 Dimensions.

Dimensions of questionnaire

- Section 1 : Demographic profile
- Section 2 : Online Shopping profile and VTO awareness
- Section 3 : Likert Question were asked related to VTO

Google forms were used for this purpose and the whole survey was carried out online.

Collection, organizing and cleaning of data result

The research design encompasses both primary and secondary sources of data. Secondary sources of data have been collected by reviewing already existing literature and primary data data has been acquired via self-administered questionnaire. An online survey using questionnaires was conducted in which respondents were encouraged to fill the questionnaire remotely.

The data was then organized into excel. In the survey various common errors like missing values, duplicate entries, and inconsistent formats were encountered while organizing and cleaning of the data. However, all such errors were removed to increase the reliability and transparency of the survey. However in total 160 responses were considered valid and included for conducting further research.

Data Reduction

Analysis was done with the help of SPSS software version 25 and data reduction has been done to extract factors. Frequency distribution was calculated to evaluate the demographic attributes like age, gender, income. Mean perception score has been calculated to identify the specific strength and weakness and guide improvements. The variety of items like clothing, footwear, cosmetics, beauty products, and groceries have been clubbed together into high level categories for data reduction purposes. Accuracy of data is ensured by conducting KMO and Bartlett's test. 28 statements have been reduced to four factors (Adoption of VTO by users, second realism and accuracy of current VTO technology according to the users, third influence of VTO Technology in decision making of the users, and fourth post purchase behaviour of the user.) to increase efficiency of the research. Interrelatedness of a variety of items have been proved with the help of Cronbach’s Alpha test. Its values range between 0 to 1. Higher values indicate greater reliability ensuring that questions are measured and matching with the purpose and objectives of the research.

Analysis & Interpretation

Table 1
Frequency distribution of respondents based on their online shopping and Virtual Try on (AR technology) awareness

How often do you make online purchases?	**Once a week**	**Two or three times a week**	**Once a month**	**Once every quarter(3 months)**	**Once a year**	**Total**
	50(31.3%)	**26(16.3%)**	**49(30.6%)**	**21(13.1%)**	**14(8.7%)**	**160(100%)**
Which fashion categories do you mostly purchase online?	Clothing, Footwear	Cosmetic/ Beauty products	Accessories Bag, Jewelries etc.	Groceries		
	95(59.4%)	29(18.1%)	31(19.4%)	5(3.1%)		160(100%)
Have you ever use Virtual Try- on (AR Technology)system while online shopping	Yes	No				
	88(55%)	72(45%)				160(100%)
How often you use Virtual try on feature when shopping online	Always	Often	Sometimes	Rarely		
	9(5.6%)	22(13.8%)	41(25.6%)	88(55%)		160(100%)

Descriptive statistics of respondents online shopping and Virtual Try on (AR technology) awareness

The data of online shopping and Virtual Try on (AR technology) awareness is tallied into frequency distribution analysis and cumulative frequency distribution. From the above table it has been deciphered that 31.3% of respondents do online shopping once a week, 16.3% % of respondents prefer online shopping two times or three times a week, 30.6% of respondents do online shopping once a month, other 13.1% respondents do online shopping once ever quarter (3 months) and rest 8.7% do online shopping only once a year. Additionally, it also has been analyzed that 59.4% of respondents like to buy clothes and footwear online, next 18.1% prefer buying cosmetic/ beauty products online, next 19.4% like to buy accessories like bags, jewelries etc. online and about 3.1% prefer buying groceries products online. It also has been found out that 55% of the respondents are aware about Virtual try on (AR technology) and 45% of respondents are still not about this technology. Furthermore, 5.6% of respondents always use Virtual try on feature while shopping online, 13.8% of them often use this feature, 25.6% of them sometimes use virtual try on feature, and 55% of respondents rarely use Virtual try on feature.

Table 2
Null Hypothesis

S. no.	Statements	Null Hypothesis (Accepted / Rejected)
S1	I often use VTO feature while shopping if its available on the e-shopping App/website on the basis of income.	Rejected
S2	VTO feature make online shopping easier and effortless for all	Accepted
S3	I heavily rely on the VTO feature to check the look or fit of the product.	Accepted
S4	VTO helps me make more informed decisions.	Accepted
S5	I often find myself using the VTO feature for fun while online shopping on the basis of income	Rejected
S6	I often find technical issues(lags, glitches etc.) while using VTO	Accepted
S7	I would use VTO more if it loads faster and works smoothly	Accepted
S8	I avoid using VTO due to data and security concerns	Accepted
S9	I avoid using VTO if it asks for too many permissions like (camera, mic, location etc.)	Accepted
S10	I prefer using VTO only if it’s from a well-known or trusted brand	Accepted
S11	How satisfied are you from the visuals and realism of the product shown on you in VTO.	Accepted
S12	VTO makes it easier to evaluate fit and style.	Accepted
S13	VTO can accurately present how different sizes of the same product will look on me	Accepted
S14	VTO (AR) provided rich, vivid images of clothes	Accepted
S15	VTO give realistic texture and material representation of the product	Accepted
S16	VTO can replace the need to physically try-on products for me	Accepted
S17	I feel more confident in my purchase decision when using VTO	Accepted
S18	VTO supports me in comparing different items efficiently.	Accepted
S19	I am likely to buy if I can visualize myself wearing the product	Accepted
S20	I prefer online shopping from retailers who provide VTO features over those who don't.	Accepted
S21	Using the VTO feature increases my chances of purchasing the product.	Accepted
S22	When using VTO while shopping I end up purchasing things that I wasn't planning to purchase.	Accepted

S. no.	Statements	Null Hypothesis (Accepted / Rejected)
S23	I get the urge to buy immediately after using VTO according to location	Rejected
S24	VTO encourages me to do unplanned purchases.	Accepted
S25	I made fewer incorrect purchases thanks to VTO (AR).	Accepted
S26	The product I received fit me exactly as it appeared in the VTO (AR) preview according to location	Rejected
S27	I have a high probability of returning the goods I bought with the help of the VTO feature.	Accepted
S28	I intend to shop using VTO (AR) again.	Accepted

It can be deciphered that the differences in statements “S1” and “S5” with reference to income with reference to location were found to be statistically significant as its p-value is less than 0.05.The higher mean perception score in respondents having family income between 15–20 lakhs relies more on Virtual try on feature before making the purchase of the product. Statements “S23” and “S26” with reference to location were found to be statistically significant as its p-value is less than 0.05 and the differences in rest of the statements were not statistically significant. The higher mean perception score for urban areas indicates that respondents in urban areas usually use Virtual try on feature before making the purchase of the product

Table 3
Frequency distribution of respondents based on their Demographic Attributes

Demographic	Frequency						Total
Location	Rural	Semi Urban	Urban				
	13(8.1%)	18 (11.3%)	129(80.6%)				160 (100%)
Gender	Male	Female					
	83 (51.9%)	77(48.1%)					160 (100%)
Family Income (In lakhs)	Below 5 lakhs	5-10lakhs	10–15 lakhs	15–20 lakhs	20–25 Lakhs	Above 25 lakhs	
	55(34.4%)	45(28.1%)	21(13.1%)	8(5%)	7(4.4%)	24(15%)	160(100%)

Descriptive statistics of demographics

The data of demographics is tallied into frequency distribution analysis and cumulative frequency distribution. The result of the analysis has been displayed in Table3. From the table it has been interpreted that around 8.1% of respondents belong to rural areas, another 11.3% of respondents belong to semi urban areas and 80.6% of respondents belong to urban areas. The questionnaire was filled by a total of 160

respondents out of which 51.9% of them are male and the rest 48.1% are female. Moreover, from the family income of respondents it has been analyzed that 34.4% of respondents have income of less than 5 lakhs, next 28.1% of respondents have income between the range 5-10lakhs, next 13% of them have income between 10–15 lakhs ,5% of respondents have income between 15–20 lakhs, 4.4% of respondents have income between 20–25 lakhs and rest 15% have income above 25 lakhs.

Table 4
Reliability coefficient, KMO and Bartlett test Output

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.924
Bartlett's Test of Sphericity	Approx. Chi-Square	2892.873
	df	378
	Sig.	0.000

Reliability Statistics	
Cronbach's Alpha	N of Items
0.950	28

Table provides the Cronbach's Alpha (Reliability coefficient), Kaiser-Mayor-Olkin (KMO), sampling adequacy, and chi-square value of Bartlett's test. The value of Cronbach's Alpha shows how closely related a set of items are as a group. The value of 0.950 is **very high** (typically 0.70 is considered acceptable, and 0.90 + is considered excellent). This indicates **excellent internal consistency** among the 28 items. In KMO test value of 0.924 is considered **excellent**, this indicates that the intercorrelations among the variables are high enough for factor analysis to be a appropriate, and the values of the Bartlett test determines if the correlation matrix is significantly different from an identity matrix (which would mean the variables are unrelated). The small significance value ($p < 0.001$) indicates that the variables are **not independent** and are sufficiently related. All the three test indicate that the data is highly suitable for factor analysis.

Table 5
Factor Analysis- rotation Component Matrix and Communality

Rotated Component Matrix					
	Component				
	1	2	3	4	Communalities
VTO (AR) provided rich, vivid images of clothes	0.780				0.738
VTO can accurately present how different sizes of the same product will look on me	0.753				0.718
VTO can replace the need to physically try-on products for me	0.700				0.560
VTO supports me in comparing different items efficiently.	0.696				0.675
VTO give realistic texture and material representation of the product	0.690				0.568
VTO makes it easier to evaluate fit and style.	0.684				0.535
I feel more confident in my purchase decision when using VTO	0.682				0.670
How satisfied are you from the visuals and realism of the product shown on you in VTO	0.621				0.525
VTO encourages me to do unplanned purchases.		0.815			0.615
When using VTO while shopping I end up purchasing things that i wasn't planning to purchase		0.731			0.697
I get the urge to buy immediately after using VTO.		0.729			0.611
I made fewer incorrect purchases thanks to VTO (AR)		0.653			0.729
I have a high probability of returning the goods i bought with help of VTO feature		0.648			0.649
I prefer online shopping from retailers who provide VTO feature over those who don't		0.557			0.735
The product I received fit me exactly as it appeared in the VTO (AR) preview		0.533			0.631
Using VTO feature increases my chances of purchasing the product.		0.441			0.651
I often use VTO feature while shopping if it's available on the e-shopping App/ website			0.821		0.693
I often find myself using VTO feature for fun while online shopping			0.651		0.708

Rotated Component Matrix			
	Component		
I heavily rely on VTO feature to check the look or fit of the product	0.594		0.542
VTO help me make more informed Decisions	0.578		0.600
VTO feature make online shopping easier and effortless for me	0.559		0.567
I intend to shop using VTO (AR) again	0.553		0.704
I avoid using VTO if it asks for too many permissions (like camera, mic, location etc.)		0.746	0.612
I would use VTO more if it load faster and works smoothly		0.684	0.729
I prefer using VTO only if it's from a well-known or trusted brand		0.683	0.567
I often find technical issues (lags, glitches,etc) while using VTO		0.650	0.630
I avoid using VTO due to data and security concerns		0.572	0.532
I am likely to buy if I can visualize myself wearing the product		0.462	0.539
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.			
a. Rotation converged in 8 iterations.			

The above table shows that after dimension reduction and factor analyses the 4 main components (factors) came up which explains the 63.327 percent of total variation. The total variation explained by the first factor, second factor, third factor and the fourth factor are *44.187, 9.014, 5.453* and 4.673 respectively. The first factor shows the adoption of VTO technology by the users. The second factor shows the Realism and Accuracy of the current VTO Technology according to the users, the third factor is the indicator of influence of VTO technology in Decision Making of the users, and the forth factor shows the post purchase behavior of the user.

Major Findings

- The sample comprised 160 young adults (out of which 52% are male, 48% are female) from northern India, with 80.6% of them residing in urban areas with board income range.
- Online-shopping frequency: 31% shop weekly, 16% 2-3 times/week and out of all the respondents, 59% purchase clothing/footwear, 18% cosmetics, 19% accessories online.

- VTO awareness: 55% of the respondents were aware of AR-based VTO, 45% of them were not aware. This means more than half the people have some knowledge about VTO technology. Actual usage: 5.6% always, 13.8% often, 25.6% sometimes, 55% rarely. The usage data indicates that while many may be aware, most people don't use it regularly
- Mean perception scores showed no statistically significant gender differences across 28 items which indicates that overall positive and negative opinions about VTO are essentially the same between genders, however females displayed slightly higher means, suggesting marginally greater VTO reliance (females are more likely to trust and use VTO for online shopping).
- Mean perception scores in regards to Location - (urban, semi urban and rural) it was observed that two statements (S23 & S26) among the 28 statements showed a significant difference in perception indicating that VTO's impact in purchase decision is more on the respondents residing in urban areas.
- In regards to income, we noticed that two statements are found to be statistically significant-
    - *'I often use VTO feature while shopping if it's available on the e-shopping App/website'* it was noticed that respondents having family income in the range of 15–20 lakhs demonstrated greater reliance on the use of VTO feature before making a purchase compared to other income groups.
    - In the statement, *'I often find myself using VTO feature for fun while online shopping'* we found the similar pattern of respondents having family income in the range of 15–20 lakhs are engaging more with VTO feature and the experience of it is adding to their enjoyment while respondents in income group of 20–25 lakhs are engaging least among all the income groups.
- Reliability of the instrument were as follows-
    - Cronbach's $\alpha = 0.950$ (excellent internal consistency)
    - KMO = 0.924 (sampling adequacy)
    - Bartlett's test $\chi^2 = 2892.873$, $p < 0.001$ (significant factorability)

Overall it showed that the instrument is highly reliable and the data is excellent for exploring underlying factors.

- In Factor analysis, four orthogonal components emerged, explaining 63.3% of total variance:
    - **Adoption of VTO** (44.2% variance)
    - **Realism & accuracy** (9.0%)
    - **Influence on decision-making** (5.5%)
    - **Post-purchase behaviour** (4.7%).
- Overall, VTO boosts purchase intention, reduces perceived fit uncertainty, and can lower sales return rates, but technical glitches, loading speed, and privacy concerns remain barriers to wider adoption.

Conclusion

Virtual technology using Augmented Reality (AR) has played an important role in transforming and reshaping businesses and its activities. This research provides powerful insights into how the VTO provides an immersive shopping experience, providing personalization and customized experience. It bridges the gap between online shopping and traditional shopping expectations allowing for contactless try on to consumers. There are various challenges which were being faced while conducting this research like time involved in collection of questionnaires, data and privacy concerns which can be improved in future to make VTO using AR more efficient and effective feature for the firms.

The study undertook the detailed analysis of 28 statements majorly divided into four factors: Adoption of VTO, Realism and accuracy, Influence on decision making, and post purchase behavior. The Research paper consolidates the findings of Adoption of VTO technology by considering key Demographic attributes like location, gender, family income. Frequency distribution was calculated revealing most of the respondents are predominantly men belonging to semi urban areas having annual income less than 5 lakhs.

The research findings suggest that there is a significant gap between the consumer awareness and adoption of VTO technology while making the purchase. Various segments tailored marketing strategies are still needed to reduce this gap and to make this technology reliable using features for consumers.

Declarations

Author Contribution

Sunamya Singh and Vanshika contributed equally to this work.S.S.: Conceptualization, Methodology (design and distribution of data collection instruments), Writing – original draft (abstract, table interpretations, major findings), Writing – review & editing, and Literature Review.V.T.: Conceptualization, Writing—original draft (Introduction, Objectives, Data Interpretation, and Conclusion), Writing—review & editing, and Literature Review.M.K.: Supervision, formal analysis (SPSS data analysis and statistical validation), conceptualization, writing—review & editing, and overall guidance.All authors read and approved the final manuscript.

Data Availability

All data supporting the findings of this study are available within the paper and its supplementary information.

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