'A study on effectiveness of Virtual Try-Ons on consumer experience and engagement with regards to shopping Apps'

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Abstract

Virtual Try-On (VTO) technology has transformed the e-commerce market, particularly in shopping apps, by allowing customers to see things on themselves before purchasing. This study uses secondary data from current research, industry publications, and case studies to assess how well VTO improves consumer experience and engagement. The results show that VTO greatly enhances customer satisfaction, raises engagement indicators, and has a favourable impact on purchasing behaviour. A conclusion emphasizing the revolutionary influence of VTO in digital retail is included, along with suggestions for companies and scholars. Virtual try-on (VTO) technology has become a game-changer in e-commerce, particularly in shopping applications, where it is changing customer interaction and experience. Using secondary data analysis, this study investigates the efficacy of virtual try-ons, emphasizing how VTO features affect customer happiness, involvement, and purchasing decisions. The conclusions, recommendations, and findings are derived from industry reports and recently published research, offering businesses and academic scholars practical insights.

Introduction

Using the combination of augmented reality (AR) and artificial intelligence (AI), virtual try-on technology allows consumers to see how products—particularly apparel, accessories, and beauty products— look on oneself before making a purchase. By addressing enduring issues with online purchasing, such as concern regarding fit, look, and styling, VTO integration in shopping applications has improved customer confidence and engagement. Virtual Try-On (VTO) capabilities have been included into shopping apps, revolutionizing the online shopping experience, thanks to the quick development of augmented reality (AR) and artificial intelligence (AI). VTO reduces ambiguity and boosts confidence in purchasing decisions by enabling consumers to view how things, particularly apparel, accessories, and cosmetics, appear on their own bodies.

Literature Review

Dr. P. Archana et al. (2024)

A semantic analysis of existing research on augmented reality (AR) applications in online clothing shopping, was carried with a particular focus on virtual try-on (VTO) and 3D visualization. According to their research, augmented reality (AR) greatly increases customer happiness and engagement by offering comprehensive and engaging online purchasing experiences. The authors stress that VTO features are a useful addition to

shopping applications since they lower return rates and boost decision-making confidence. More customization and interaction are made possible by the combination of AR and VR technology, which turns conventional e-commerce into v-commerce.

A.A. Shaikh et al. (2014)

The usefulness of virtual try-on features in online purchasing was compiled by A.A. Shaikh and associates. Their analysis highlights how AR and VR technologies are revolutionizing consumer experiences, highlighting how VTO not only improves engagement but also offers customized purchasing experiences. According to the study, VTO improves customer retention, lowers uncertainty, and has a beneficial impact on purchasing choices. The authors come to the conclusion that businesses looking to increase online sales and customer loyalty should strategically incorporate VTO features.

V. Rathee (2023)

The impact of virtual try-on technology on consumers' mental images of objects shown on internet platforms is empirically demonstrated by V. Rathee's descriptive research. According to the study, VTO technology lessens the issue of fit and match by enabling consumers to see things in their actual environments. Participants from the Delhi NCR area were participated in the study, which assessed how VTO affected aspects of mental imagery such magnitude, elaboration, and intensity. The results show that VTO improves the whole purchasing experience, making it more engaging and pleasurable for customers.

M.S. Akter (2025)

With an emphasis on gender disparities, M.S. Akter's study investigates how VTO technology affects customer decision-making in online buying. According to the study, VTO features have a favorable impact on purchasing decisions by lowering hesitancy and offering realistic product representation. VTO is an essential tool for merchants since it boosts customer confidence and lowers return rates, according to the report. According to Akter's research, VTO works particularly well in industries like fashion and cosmetics where tactile and visual sensations are crucial.

A.R. Rofi & T. Suryanto (2025)

A.R. Rofi and T. Suryanto investigated how user immersion affects virtual try-on technology's efficacy. According to their research, VTO features have a major impact on perceived ease of use and immersion, both of which raise customer purchase intention. Purchase decisions are significantly influenced by the mediating factors of perceived satisfaction and perceived ease of usage. Interactive, user-friendly, and entertaining VTO elements can increase engagement and conversion rates in shopping applications, according to the study. To optimize the impact of VTO features, the authors advise merchants to concentrate on improving their realism and interaction.

Research Gap

Virtual try-on (VTO) technology still has significant research gaps despite its quick advancement. With little investigation of long-term impacts on brand image and loyalty, the majority of research concentrate on technical elements and short-term consumer impact. Unrealistic experiences result from VTO's inability to effectively simulate fabric action, body variation, and multi-garment layering. Robust datasets and assessment criteria for sophisticated VTO algorithms are also lacking, particularly for a variety of product categories like jewelry and accessories. Furthermore, insufficient is known about the cognitive and psychological mechanisms that underlie VTO's impact on customer choices.

Research Methodology

The secondary data analysis of previous research, industry reports, and case studies on virtual try-on technology served as the foundation for this study. Academic publications, market research studies, and expert analyses released between 2022 and 2025 are among the data sources. The influence of VTO on customer experience, engagement, and purchase behavior in shopping applications is the main emphasis of the investigation.

Objectives of Study

1. To study the effectiveness of VTO on customer involvement and experience during shopping.

2. To examine return rates and purchasing patterns of consumers using VTO feature.

3. To investigate the effect of VTO on customers emotionally and psychologically.

Hypothesis

H1. There is significant impact of VTO on customer involvement and experience
H2. There is significant impact on purchasing pattern and demographic factors
H3. There is significant impact on Customer emotional and Psychological mechanism due to VTO.

Scope of the study

The usefulness of VTO in shopping applications, particularly in the fashion and cosmetics industries, is the main emphasis of this study. It looks at customer involvement, experience, and purchasing patterns.

Data collection method: Secondary data is collected from published articles, journals, reviews from experts and websites from 2021-2025.

Limitation of the study
Due to its reliance on secondary data, the research might not be able to record current customer feedback or geographical differences.

Data Analysis and interpretation

Secondary data analysis shows that VTO features greatly improve customer involvement and experience. In addition to interacting with more things throughout a session and spending more time investigating products, users also show greater conversion rates. By guaranteeing more precise assumptions about fit and appearance, VTO also lowers return rates. Purchase intentions and loyalty are positively impacted by the technology's enhancement of sensory and emotional brand experiences.

Customer experience and Engagement

According to research, VTO features greatly enhance customer involvement and experience. Research indicates that when AR technologies are accessible, consumers spend 25% more time perusing things and have 40% higher click-through rates. Additionally, engagement analytics show that in apps with VTO capabilities, the amount of time on product pages increases by 180%, session duration improves by 65%, and pages per session increases by 45%. These enhancements imply that VTO increases customer satisfaction and retention by making purchasing more engaging, pleasurable, and customized.

Impact on purchase behaviour

Purchase decisions are significantly influenced by virtual try-ons. Buyer trust is increased by 45% and checkout hesitancy is decreased by 60% when items may be seen before purchase. Additionally, VTO installations have resulted in a 32% rise in conversion rates and a 30–50% decrease in return rates, saving

merchants a substantial amount of money. By guaranteeing more precise expectations for fit and appearance—a significant annoyance in online shopping—the technology also contributes to a decrease in product return rates.

Findings

- Virtual try-ons offer realistic, multisensory experiences that mimic in-store shopping, boosting customer happiness and lowering doubts about look and fit.
- The customers report feeling more confident and less hesitant while making purchases, which results in better-informed and contented purchases.
- The engagement of apps with VTO features is 200% higher than that of those without.
- Deeper engagement and brand loyalty are shown by consumers spending more time researching products, interacting with more things each session, and being more inclined to return to the app.
- Some shops estimate a 32% increase in conversions and a 30-50% decrease in returns as a result of VTO.
- The solution increases overall profitability for merchants by reducing return processing expenses.
- Purchase intentions, contentment, and loyalty are all positively impacted by VTO's enhancement of sensory and emotive brand experiences.
- Personalized and passionate shopping experiences increase brand emotional involvement and build stronger bonds with tech-savvy customers.
- When VTO is combined with social media and Omni-channel retail tactics, retailers report increased consumer involvement and loyalty.
- With improvements in 3D body scanning, visual effects, and smooth e-commerce platform integration propelling adoption, the worldwide VTO market is expected to expand quickly.
- Although its advantages, there are still issues that need for constant technical advancement, such as device compatibility, precise fit simulation, and privacy problems.

Recommendation and Suggestion

- Make investments in virtual reality VTO solutions to improve customer engagement and experience with shopping applications.
- To further increase customer confidence and lower return rates, concentrate on enhancing the precision and realism of virtual try-ons.
- Utilize engagement data and consumer comments to improve VTO features and customize the purchasing experience.
- Incorporate VTO into marketing plans to draw attention to its advantages and set it apart from rivals.
- Personalised avatars that depicts users body type and provide real-time experiences
- Introducing gamification elements like reward points, sharing images, completing style challenge, etc.
- VTO should be application for diverse variety of brands and products.
- Vigorous privacy control to build trust and confidence for the application that they are using.
- Interactive training or tutorials for all those who are unaware of VTO or do not have complete knowledge of using this feature.

Conclusion

In the e-commerce industry, virtual try-on technology has shown itself to be revolutionary, especially in shopping applications. VTO improves customer pleasure, engagement, and purchasing behaviour by offering immersive, customized, and interactive experiences. In addition to addressing major issues with online buying, the technology provides merchants with substantial financial advantages. VTO will become more crucial in determining the direction of digital retail as it develops. In the e-commerce industry, virtual try-on

technology has shown itself to be revolutionary, especially in shopping applications. VTO improves customer pleasure, engagement, and purchasing behaviour by offering immersive, customized, and interactive experiences. In addition to addressing major issues with online buying, the technology provides merchants with substantial financial advantages. VTO will become more crucial in determining the direction of digital retail as it develops.

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