

A STUDY ON CONSUMER PERCEPTION REGARDING THE ACCURACY AND REALISM OF AI- POWERED AUGMENTED REALITY TRY-ONS IN LENSKART APPLICATION

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Abstract

The advent of Augmented Reality (AR) technology has revolutionized the way consumers interact with digital products, particularly in the eyewear industry. Lenskart, a leading online eyewear retailer, has integrated AI-powered AR try-on features into its mobile app to enhance customer experience by enabling virtual trials of eyewear. This study explores consumer perceptions regarding the accuracy and realism of these AI-powered AR try-ons. Through surveys and user feedback, the research evaluates how well customers perceive the technology's ability to simulate real-life try-on experiences, focusing on factors such as fit, visual quality, and overall satisfaction. The findings indicate a mixed response, with a significant number of consumers expressing confidence in the app's accuracy, while others raised concerns about discrepancies between virtual and physical trials. Additionally, factors like device quality, lighting conditions, and user familiarity with AR technology influenced perceptions of realism. This research contributes to understanding the role of AI-driven AR in consumer decision-making within the digital retail landscape.

Keywords: Augmented Reality (AR), Artificial Intelligence (AI), Lenskart, AR Try- ons Accuracy, Realism.

Introduction

In recent years, augmented reality (AR) has revolutionized the way consumers interact with products online, offering innovative solutions to bridge the gap between physical and digital shopping experiences. Lenskart, a leading eyewear brand, has embraced AR technology by integrating virtual try-ons, allowing customers to virtually try on glasses before making a purchase. This technology aims to enhance the shopping experience by providing consumers with a highly interactive and personalized way to visualize eyewear, ensuring a seamless and informed buying decision. However, the effectiveness and realism of such technology are crucial factors in influencing consumer perception and, ultimately, their purchasing behavior.

Understanding the consumer perception regarding the accuracy and realism of AI-powered AR in the Lenskart app is essential, as these factors directly impact the level of

trust users place in the virtual try-on feature. Accurate representation of how glasses will look and fit in real life is a significant determinant in user satisfaction. If the AR experience aligns closely with reality, it can enhance confidence in online purchasing decisions, reduce the likelihood of returns, and increase customer loyalty. By investigating the consumer, this study aims to explore the influencing factor and consumer perception of the accuracy and realism of AR try-ons at Lenskart app, focusing on key factors such as user experience, perceived effectiveness, and the overall impact on consumer confidence in the product.

Objectives

1. To identify the demographic factors of the consumers of lenskart.
2. To analyse the influence of AR realism on consumer trust in lenskart's online shopping experience.

Scope of the Study

This study explores consumer perceptions of the accuracy and realism of AI-powered AR try-ons in the Lenskart app. It evaluates how users perceive the fit, visual quality, and authenticity of virtual eyewear. Additionally, demographic factors are considered in understanding consumer experiences.

Statement of the Problem

With the rise of e-commerce, augmented reality (AR) has emerged as a key technology to bridge the gap between physical and online shopping experiences. In the eyewear industry, where product fit and appearance are vital factors in the purchasing decision, Lenskart has implemented an AR try-on feature that allows customers to virtually try on different eyewear styles before purchasing. As a result, there is a need to explore how these factors influence consumer attitudes towards AR, what specific aspects of the try-on experience are most important to them, and how these perceptions affect their purchasing behavior. Addressing this gap will provide valuable insights for improving the AR technology, ensuring that it meets consumer expectations and effectively supports decision-making in an increasingly competitive digital marketplace.

Review of Literature

P. Goel, B. Sharma, A. Kumari, A. K. Gupta and P. Chhajed (2024) "A Review on VIRTUAL TRY-ON,".

This paper presents a comprehensive review of recent literature and innovations in virtual try-on technology, focusing on methodologies aimed at enhancing realism, accuracy, and user engagement.

Soeltz, W. K., Hickey, J., Kostic, Z., Lin, A., & Swamy, K. (2022). "Exploring the use of mobile AR to aid decision-making on-the-go".

This paper is to discuss the development of a mobile application that will assist users in making on-the-spot decisions based on online content displayed nearby. The study concludes with a discussion of the application's user experience and future research directions in this field.

Debajyoti roy., pratik paul., Dr. vidhya pillai. (2022) "A case study on lenskart: how it disrupted the indian eyewear segment".

This case study outlines the numerous steps and strategies of the company's operations that have helped Lenskart establish itself as an innovative provider of eyeglasses solutions in India.

Research Methodology

It is an analytical study where a sample for the entire population was chosen from Lenskart application user in the city of Madurai based on their age, gender, occupation, monthly income and few other factors. Convenience sampling method has been adopted to select the respondents. Interview schedule was conducted among 50 lenskart application users in Madurai city.

Table 1 Demographic and Socio-Economic Factors of Lenskart Application User

S.No	Particulars	Classification	Frequency	%
1	Age	Below 20	10	20%
		21-30	30	60%
		31-40	4	8%
		41-50	5	10%
		Above 50	1	2%
		Total	50	100%
2	Gender	Male	22	44%
		Female	28	56%
		Others	0	0%
		Total	50	100%
3	Occupation	Students (Others)	17	34%
		Salaried	15	30%
		Business	9	18%
		Home maker	5	10%
		Government employee	3	6%
		Seaman (Others)	1	2%
		Total	50	100%
4	Monthly Income	Less than Rs 20,000	8	16%
		Rs 20,000- 60,000	24	48%
		Rs 60,000- 1,00,000	12	24%
		Above Rs 1,00,000	6	12%
		Total	50	100%

Source: Primary data

The sample is predominantly young, with 80% of respondents being under 30 years old, with 60% are between the age 21-30. A significant portion are females 56%. It is heavily

populated by students 34% which represents young generation and salaried workers 30%, while the income distribution is largely in the middle-income range Rs 20,000-60,000, with some respondents in the high-income and low-income brackets. The data represents a young, predominantly female, middle-income group with a mix of students and salaried individuals.

Table 2 Factors influencing purchase decisions using AR try-ons.

The responses are collected on the basis of ranking method.

Particulars	Points	Rank
Virtual try-ons	481	X
Time and cost efficient	535	I
Convenience	501	VI
Suitability	492	VIII
Style and frame recommendations	498	VII
Frame customization	489	IX
Enhanced varieties	511	III
Easy return	515	II
Size adjustment	507	V
High quality visuals	510	IV
Quick decision making	478	XI

Source: Primary data

This table 2 represents that the key influencing factors for users are practical elements like time and cost efficiency (Rank I, 535) highlighting how much they value time and cost. The ability to easily return products (Rank II, 515) indicating that being able to return products without hassle is also very important. After these, variety (Rank III, 511) signalling that users appreciate having multiple choices to meet their individual needs, visual quality (Rank IV, 510) and fit adjustments (Rank V, 507) are important, as they ensure that the product fits well, convenience (Rank IV, 501) indicating that while users appreciate ease and simplicity in their shopping experience, but more innovative features like style and frame recommendations (Rank VII, 498), suitability (Rank VIII, 492), frame customization (Rank IX, 489), virtual try-ons (Rank X, 481) and quick decision-making (Rank XI, 478) play a lesser role in decision-making. The data suggests that consumers prioritize security, savings, and customization, with technological innovations like virtual try-ons being secondary in influence.

Findings of the Study

- **Predominant Age Group:** The majority of the respondents are in the 21-30 years age group, comprising 60% (30 out of 50). This suggests that this age group is the most represented in the study.

- **Female Majority:** The sample consists of 56% females (28 out of 50), compared to 44% males (22 out of 50). There is a slightly higher representation of females in the sample, which could be important when analysing preferences or trends.
- **Wide occupational and income range:** A significant portion of the sample consists of students (34%), and majority of the respondents fall within the middle-income group (Rs 20,000-60,000), which is important for understanding the financial capacity and buying behavior of the respondents. which may influence the purchasing behavior and preferences in terms of affordability and product/service utility.
- **Most Influential Factors:** Time and cost efficiency and easy return policies are the most important factors, suggesting that consumers prioritize practicality and low-risk transactions when shopping.
- **Variety and Quality:** Enhanced varieties and high-quality visuals are also important, indicating that consumers appreciate having options and want clear, reliable information about the product.

Suggestions

- **Focus on Time, Cost, and Return Policies:** The highest-ranked factors indicate that consumers prioritize affordability, quick transactions, and easy returns. Emphasize these aspects in your product offerings, marketing, and customer service.
- **Product Variety and Personalization:** Offer a wide range of products and customization options to cater to diverse customer needs.
- **Visuals and Fit:** Ensure high-quality visuals and size adjustment features to help customers make informed decisions
- **Balance Technology Practicality:** While virtual try-ons and quick decision-making are important, they should complement more fundamental aspects like cost efficiency and convenience.
- By addressing the highest-ranked factors, brands can significantly improve customer satisfaction and increase conversion rates.

Conclusion

The study on consumer perception regarding the accuracy and realism of AI-powered augmented reality (AR) try-ons in the Lenskart application revealed that while the majority of users found the feature to be time-saving, cost saving, convenient, and innovative, there were mixed reactions regarding its accuracy and realism. Consumers generally appreciated the ability to virtually try on eyewear, with many highlighting its role in narrowing down choices before physical trials. Younger consumers exhibited higher trust and comfort with the technology, while older users showed some doubt and mistrust. Overall, the feature is valued for its potential, but improvements in virtual try-on feature, accuracy, frame recommendation and suitability are necessary to enhance the realism and effectiveness of the AR try-on experience.

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