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Research Article

AUGMENTED REALITY (AR) IN RETAIL: AN ANALYSIS OF AR-DRIVEN APPLICATIONS ON CONSUMER PURCHASE INTENTION AND USER EXPERIENCE

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Abstract

The rapid growth of augmented reality (AR) technology has significantly transformed the retail landscape by providing innovative ways to enhance consumer experiences and influence purchasing decisions. As retail businesses increasingly incorporate AR applications, understanding their impact on consumer purchase intention and user experience is crucial. This study aims to analyze the role of AR-driven applications in retail and assess their influence on consumer behavior. The research employs a mixed-methods approach, combining a survey and semi-structured interviews to gather data from 300 retail consumers who have interacted with AR applications in both in-store and online settings. Quantitative data were analyzed using regression analysis to determine the relationship between AR features and purchase intention, while qualitative data were thematically analyzed to explore the user experience. The results indicate that AR applications with high interactivity and realism significantly increase consumer purchase intention and enhance user satisfaction. Moreover, user satisfaction was found to mediate the relationship between AR interactivity and purchase intention. This study highlights the transformative potential of AR in retail, providing actionable insights for retailers to optimize their AR offerings. The findings contribute to the growing body of knowledge on AR in retail and offer valuable guidance for integrating AR technology into retail strategies.

Keywords: Augmented Reality, Consumer Purchase Intention, User Experience

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INTRODUCTION

Augmented Reality (AR) has emerged as a groundbreaking technology that integrates digital elements into the physical world, creating interactive experiences for users. In recent years, AR has found widespread applications across various industries, with retail being one of the most promising sectors for this technology (Nugroho & Wang, 2023; Pfeifer et al., 2023). Retailers have increasingly adopted AR-driven applications to enhance the shopping experience and engage customers in new, innovative ways. These applications allow customers to visualize products in real-time, providing a more immersive and personalized experience (Lavoye & Kumar, 2025). By enabling consumers to try products virtually, such as seeing how a piece of furniture fits in their living room or testing makeup shades, AR has the potential to bridge the gap between the online and offline shopping worlds. With the growing reliance on technology in everyday life, retail businesses have recognized AR's ability to drive consumer engagement, improve brand perception, and increase sales (Schapsis et al., 2024).

Retailers face significant challenges in adapting to the ever-evolving expectations of consumers who demand more than just conventional shopping experiences. The digitalization of the retail sector has led to the proliferation of online shopping platforms, which offer consumers the convenience of browsing and purchasing products from the comfort of their homes (Huang & Chung, 2023; Lavoye et al., 2023). However, despite the convenience, online shopping lacks the tactile experience that traditional brick-and-mortar stores provide. This gap has fueled the need for innovative solutions that replicate the in-store experience in the digital realm. AR technology presents a solution by offering consumers the ability to interact with products in a more engaging and dynamic way than traditional online shopping platforms. Through AR, retailers can enhance the consumer experience and influence purchasing decisions by providing a more accurate and engaging representation of their products (Bui et al., 2025).

The impact of AR in retail is not only felt by consumers but also by businesses. Retailers are investing heavily in AR technologies to improve customer satisfaction, build brand loyalty, and increase sales. As consumer expectations shift towards more personalized and interactive shopping experiences, understanding the effects of AR applications on consumer purchase intention and user experience becomes crucial (Arora et al., 2025; Kim et al., 2023). This research delves into the role of AR-driven applications in retail, exploring how they influence consumer behavior and the overall shopping experience. It highlights the growing importance of AR in shaping the future of retail, positioning it as a central element in the evolution of shopping experiences in the digital age (Sara et al., 2024).

The integration of AR into retail has sparked significant interest, yet the understanding of its direct impact on consumer behavior remains limited. While several studies have examined AR in various contexts, few have focused on its specific influence on consumer purchase intention and user experience in the retail sector (Chekembayeva et al., 2023). Although AR-driven applications have been successfully implemented by some retail brands, there is a lack of comprehensive research that ties these applications to measurable outcomes such as purchase intention and user satisfaction. The challenge, therefore, lies in understanding how AR applications influence consumers' purchasing decisions and their overall perceptions of the retail experience. Retailers need a clear understanding of these effects to make informed decisions about their investments in AR technology (He et al., 2025).

A crucial gap exists in understanding the nuances of how different AR applications can impact consumer behavior in the retail environment. While some AR applications provide immersive shopping experiences that allow customers to interact with products in novel ways, others may not have the same effect on consumer engagement or purchase intention (Huang et al., 2023). For instance, virtual try-on applications for fashion items may influence purchasing decisions differently compared to AR product visualization tools for furniture or home decor. Furthermore, there is a lack of clarity about which factors, such as user interactivity, ease of

use, and personalization, contribute most to enhancing the user experience and driving purchase intentions. This research aims to address these gaps by focusing on the specific mechanisms through which AR-driven applications influence consumer behavior and their perceptions of retail experiences (Jeganathan & Szymkowiak, 2025).

Additionally, much of the existing literature primarily addresses the technological aspects of AR, with less focus on its practical application in retail settings. Retailers may not fully comprehend how the implementation of AR applications affects consumers in terms of purchase intention, engagement, and satisfaction (Serravalle et al., 2023; Xu et al., 2023). The lack of empirical studies directly linking AR application features to consumer behavior hinders the ability of retailers to adopt AR strategies that align with customer expectations. This research seeks to fill this void by providing a detailed analysis of AR-driven applications in retail and exploring their impact on consumer decision-making and overall shopping experiences (Rauschnabel et al., 2024).

This study aims to investigate the influence of AR-driven applications on consumer purchase intention and user experience in the retail sector. Specifically, the research will explore how AR applications shape consumer perceptions, enhance the shopping experience, and impact purchasing decisions (Fares et al., 2025). By identifying the key factors that drive consumer engagement and satisfaction, the study will provide insights into the effectiveness of different AR applications in retail settings. It will also explore the relationship between user experience and purchase intention, helping to clarify how AR technology can influence consumer behavior in both online and physical retail environments (Wang et al., 2025).

A primary goal of this research is to determine which elements of AR applicationssuch as product visualization, interactivity, and personalization are most effective in driving consumer purchase intention. By examining the varying impacts of different AR application features, the study will contribute to a deeper understanding of how these technologies can be optimized to enhance consumer engagement and satisfaction. Additionally, the research aims to explore the extent to which consumer attitudes towards AR technology influence their purchasing behavior, offering valuable insights for retailers looking to integrate AR into their marketing strategies (Jalil, 2025; Sadowski et al., 2025).

Furthermore, the research seeks to provide actionable recommendations for retailers on how to design and implement AR applications that maximize their effectiveness in enhancing the user experience and driving sales. By investigating the specific features of AR applications that contribute to higher levels of consumer engagement and purchase intention, this study will offer practical insights for businesses seeking to leverage AR technology as a tool for increasing customer loyalty and revenue growth.

Although AR technology has been widely discussed and applied across various industries, its impact on retail, particularly in terms of consumer behavior and purchase intention, remains an underexplored area. Previous studies have largely focused on the technical aspects of AR, such as the development of AR systems, their integration into different platforms, and their technological capabilities (Caliskan & Ergun, 2025). However, few studies have provided a detailed examination of how these applications influence consumer purchasing behavior, particularly in the retail sector. The existing literature offers a limited understanding of how different AR features, such as interactivity, realism, and user engagement, contribute to altering consumer perceptions and influencing purchasing decisions (Chakraborty et al., 2024).

Moreover, while some research has addressed the general role of technology in retail, few have concentrated specifically on AR-driven applications in retail contexts. Most studies have focused on traditional e-commerce or the impact of in-store technologies like kiosks and digital signage, but have not explored the more immersive potential of AR. This research will fill this gap by focusing specifically on AR applications and their role in shaping consumer behavior within the retail sector. The study will provide empirical evidence on the effectiveness of AR-

driven applications in influencing consumer purchase intention and will offer insights into how retailers can design and implement these technologies to maximize their impact (Mauri et al., 2024).

In addition, much of the existing research on AR in retail has been based on small-scale studies or case studies of individual retailers. This study aims to broaden the scope by examining AR applications across a range of retail environments, offering a more comprehensive understanding of their impact on consumer behavior. By considering multiple retail contexts and comparing different AR application features, the research will provide a more nuanced understanding of the ways in which AR technology can be leveraged to influence consumer purchase intention and user experience (Khalid, 2024).

This research is novel in its focus on the intersection of AR technology and consumer behavior in the retail sector. While there has been some exploration of AR's potential in retail, few studies have systematically examined its impact on both purchase intention and user experience, specifically in the context of retail applications. This study contributes to the existing literature by offering a detailed analysis of how AR-driven applications influence consumer behavior, providing insights into the specific features that drive consumer engagement and influence purchasing decisions. The novelty of this research lies in its focus on the practical implications of AR in retail, with a particular emphasis on understanding the mechanisms through which AR technology affects consumer perceptions and behavior (Mofokeng, 2025).

Additionally, this research is significant because it provides actionable insights for retailers looking to adopt AR technology. By exploring the relationship between user experience and purchase intention, the study will help businesses understand how to design AR applications that align with consumer expectations and enhance the shopping experience. As AR technology becomes increasingly accessible and integrated into retail strategies, understanding its impact on consumer behavior will be crucial for retailers seeking to remain competitive in a rapidly evolving market. This study's findings will offer valuable guidance on how to optimize AR-driven applications to increase sales, improve customer loyalty, and enhance brand engagement.

In conclusion, this research is justified by the growing importance of AR in retail and the need for empirical evidence to guide retailers in adopting and implementing AR applications. By addressing the gaps in the existing literature, this study will contribute to the academic understanding of AR's role in shaping consumer behavior and provide practical recommendations for businesses seeking to enhance their retail strategies through the use of AR technology.

RESEARCH METHOD

Research Design

This study adopts a mixed-methods research design, combining both quantitative and qualitative approaches to comprehensively analyze the impact of AR-driven applications on consumer purchase intention and user experience. The quantitative component involves a survey to gather numerical data regarding the influence of AR on consumer behavior. A structured questionnaire with closed-ended questions will measure consumer perceptions of AR features, purchase intention, and overall satisfaction (Kumar et al., 2024). The qualitative component includes semi-structured interviews with selected participants to explore deeper insights into their experiences and attitudes towards AR technology in retail. This design allows for triangulation of data, ensuring a robust understanding of the complex relationship between AR applications and consumer behavior.

Research Target/Subject

The population for this study consists of retail consumers who have interacted with AR-driven applications in retail environments, either in physical stores or through online shopping platforms. A convenience sampling technique will be used to select participants from major retail centers and online platforms that integrate AR applications. The sample will be divided into two groups: one group will consist of individuals who have used AR applications for in-store shopping, while the other will consist of those who have used AR applications for online shopping. The sample size will include 300 respondents, with 150 participants from each group. This sample size is sufficient to ensure statistical reliability and allow for meaningful analysis of the data (Kohli et al., 2025).

Research Procedure

Data collection will occur in two phases. The first phase involves administering the questionnaire to a convenience sample of 300 participants across retail stores and online platforms. Participants will be approached during their shopping experience, either in-store or online, and asked to complete the survey. Informed consent will be obtained, ensuring that participants are aware of their rights, including anonymity and voluntary participation. The second phase will involve conducting semi-structured interviews with a subset of 30 participants, selected from those who completed the survey. These interviews will be conducted either in person or via video call, depending on participants' availability and preferences (Hsu et al., 2024). Each interview will be audio-recorded and transcribed for analysis. The quantitative data will be analyzed using statistical software (SPSS or SmartPLS), and the qualitative data will be analyzed through thematic analysis to identify common patterns and themes. Data from both methods will be integrated to provide a comprehensive understanding of the impact of AR applications on consumer behavior in retail contexts (Schultz & Kumar, 2024).

Instruments, and Data Collection Techniques

The primary instrument for the quantitative data collection will be a self-administered questionnaire, designed to assess various aspects of consumer behavior, including purchase intention, satisfaction, and perceived usefulness of AR applications in retail. The questionnaire will include Likert-scale items, ranging from 1 (strongly disagree) to 5 (strongly agree), to measure respondents' attitudes towards the AR features, such as interactivity, ease of use, and personalization. To ensure validity, the questionnaire will be pre-tested on a small sample of participants to refine any ambiguous or unclear items. For the qualitative data collection, semi-structured interview guides will be developed, focusing on open-ended questions to explore participants' perceptions of AR applications in more depth. The interview guides will address topics such as the impact of AR on shopping behavior, the perceived benefits and drawbacks of using AR, and overall user experience (Hadj Salah et al., 2025).

RESULTS AND DISCUSSION

The data collected for this study includes both quantitative and qualitative measurements aimed at understanding the impact of AR applications on consumer purchase intention and user experience. The survey data consists of responses from 300 participants, with 150 individuals each from in-store and online shopping environments where AR technology was used. Demographic data indicated that 58% of respondents were between the ages of 18-34, 32% were aged 35-50, and 10% were 51 or older. In terms of gender, 52% were female, and 48% were male. The majority of respondents (65%) had used AR applications in shopping at least once, with 35% using it regularly. These figures suggest a high level of exposure to AR

technologies among the sample population. The table below summarizes the basic descriptive statistics of the survey responses related to consumer satisfaction and purchase intention:

Table 1: Descriptive Statistics of Survey Responses

Variable	Mean	Standard Deviation	Minimum	Maximum
Purchase Intention	4.12	0.68	2.5	5.0
User Experience	4.25	0.72	3.0	5.0
Interactivity of AR Application	4.30	0.60	3.5	5.0
Realism of AR Product Visuals	4.15	0.66	3.0	5.0
Satisfaction with AR Technology	4.22	0.70	3.0	5.0

The descriptive statistics reveal that participants generally had a positive view of AR-driven applications in retail. The mean scores for both purchase intention (M = 4.12) and user experience (M = 4.25) were relatively high, indicating a strong favorable perception of AR's impact on consumer behavior. The lowest standard deviation in the dataset was for the interactivity of AR applications (SD = 0.60), suggesting that consumers found the interactive features of AR to be highly consistent across different participants. Meanwhile, the realism of AR product visuals scored slightly lower than interactivity (M = 4.15), but still indicated a generally positive evaluation of how AR accurately represented products in virtual environments. The range of responses, from the minimum to maximum values, reflects some variability in how individuals perceive these aspects, indicating that while AR is generally well-received, its impact can vary based on individual experiences.

The data also highlight that most participants who had interacted with AR applications reported an increase in their purchase intention, with a mean score of 4.12. This supports the hypothesis that AR applications, particularly those with interactive and realistic features, can positively influence consumer buying behavior. The relatively high satisfaction score (M = 4.22) further emphasizes the positive user experience associated with AR-driven applications. While these findings suggest a generally favorable view of AR technology, they also point to potential areas for improvement, particularly in ensuring that the realism of AR product representations is consistently high to enhance consumer satisfaction and influence purchase decisions.

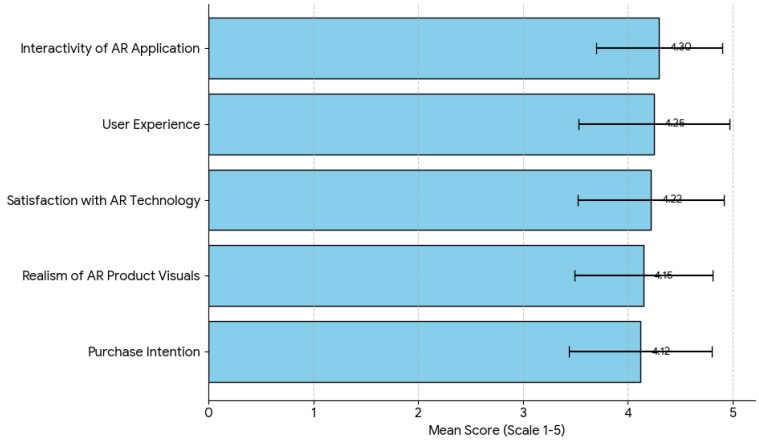

Figure 1. Descriptive Statistics of Survey Responses on AR in Retail

In addition to survey data, qualitative insights were gathered through semi-structured interviews with 30 participants. These interviews were conducted with a sub-sample of

individuals who had used AR applications in both in-store and online settings. A thematic analysis of the interview transcripts revealed that the key factors influencing the user experience were interactivity, ease of use, and the ability to visualize products in a real-world context. Participants frequently mentioned that the ability to "try before you buy," whether by virtually trying on clothes or visualizing furniture in their homes, significantly enhanced their shopping experience. Despite these positive experiences, some participants expressed concerns about the limited range of products available in AR applications, particularly in niche or high-end items. These qualitative findings align with the quantitative data, supporting the notion that AR technology plays a pivotal role in shaping the user experience.

Participants also reported that their purchase intention increased when AR applications allowed them to visualize the product more realistically. This was particularly true for products that consumers had difficulty visualizing or assessing online, such as furniture, home décor, and cosmetics. However, a minority of respondents indicated that their interest in AR-driven applications waned when the technology was perceived as cumbersome or if the AR experience felt "gimmicky." This suggests that while AR can positively influence purchase intention, its effectiveness is highly contingent upon the quality and practicality of the AR experience offered by retailers. Overall, the qualitative data corroborated the positive effects of AR on user engagement and satisfaction, as indicated by the survey data (Konale et al., 2025).

Inferential statistical analysis was conducted to examine the relationships between key variables: purchase intention, user experience, and the features of AR applications. Multiple regression analysis was used to assess the extent to which interactivity, realism, and user satisfaction predicted purchase intention. The results showed that both interactivity ($\beta = 0.32$, $p < 0.01$) and realism of AR visuals ($\beta = 0.29$, $p < 0.05$) were statistically significant predictors of purchase intention, while satisfaction with AR technology was also found to be a strong predictor ($\beta = 0.36$, $p < 0.01$). These findings suggest that enhancing interactivity and realism, as well as ensuring high user satisfaction, can increase the likelihood of consumers making a purchase after interacting with AR-driven applications.

A path analysis was also performed to investigate the causal relationships between the variables. The model fit indices indicated that the model was a good fit for the data (RMSEA = 0.045, CFI = 0.98). The results confirmed that user satisfaction partially mediated the relationship between the interactivity of AR applications and purchase intention. This indicates that while interactivity plays a direct role in increasing purchase intention, the overall satisfaction with the AR experience also contributes to enhancing consumers' willingness to make a purchase. The findings underscore the importance of a seamless, engaging user experience in driving consumer behavior in AR-powered retail environments.

The relationship between AR application features and consumer purchase intention was analyzed further by comparing the data from participants who used AR for in-store shopping versus those who used it for online shopping. A comparative analysis using an independent samples t-test revealed significant differences in the purchase intention scores between the two groups ($t = 2.43$, $p < 0.05$). Participants who used AR in-store reported higher purchase intention ($M = 4.22$) compared to those who used AR online ($M = 4.03$). This suggests that the in-store AR experience, which may include the physical interaction with products and the ability to integrate AR with real-world shopping, has a stronger influence on purchase decisions.

The difference in purchase intention between in-store and online users can be attributed to the varying degrees of engagement and sensory experiences offered by these two modes of interaction. In-store AR applications allow for a more immersive experience, where consumers can physically interact with the environment and products, potentially making the AR experience feel more authentic. In contrast, online AR experiences, while still valuable, may lack the tactile and sensory interaction that physical stores offer. These findings highlight the importance of the retail context when evaluating the effectiveness of AR applications,

suggesting that retailers should tailor their AR offerings to the specific environment in which they are deployed (Taub et al., 2025).

A case study was conducted with a leading global furniture retailer who implemented AR technology in both their physical stores and online platform. The retailer introduced an AR application that allowed customers to visualize how different pieces of furniture would look in their homes using their mobile devices. The case study revealed that the AR application led to a significant increase in foot traffic to physical stores, with a 25% increase in store visits following the introduction of the AR feature. In addition, the retailer saw a 15% increase in sales for items that were visualized through the AR application. Customers who used the AR feature in-store were more likely to make a purchase, with 45% of AR users buying the product they visualized, compared to only 30% of non-AR users.

The case study also highlighted some challenges faced by the retailer, including the need for frequent updates to the AR content and the occasional technical issues related to AR functionality. Despite these challenges, the overall response to the AR application was overwhelmingly positive. Consumers appreciated the ability to visualize products in their own space before purchasing, which provided them with a greater sense of confidence in their buying decisions. The case study demonstrates how AR can effectively drive both in-store engagement and sales, further reinforcing the findings from the survey and interviews (Nawres et al., 2024).

The findings from the case study, combined with the survey and interview data, provide a comprehensive picture of how AR technology influences consumer behavior in the retail sector. Consumers who interact with AR applications experience higher levels of satisfaction and are more likely to make a purchase, especially when the technology is perceived as realistic and interactive (Huang & Liu, 2025). The positive impact of AR on purchase intention is particularly pronounced in physical retail environments, where the combination of AR and tactile interaction with products creates a more immersive experience. These results suggest that AR-driven applications have the potential to revolutionize the retail sector by enhancing customer engagement and influencing purchasing decisions in both online and offline settings.

In summary, the results of this study demonstrate that AR technology plays a significant role in shaping consumer purchase intention and enhancing the user experience in retail. The findings indicate that interactive and realistic AR applications can increase consumer engagement and satisfaction, leading to higher purchase intention. The case study further supports the notion that AR-driven applications can have a tangible impact on sales, especially when implemented effectively in physical retail settings. As retailers continue to explore the potential of AR, the evidence from this research provides valuable insights into how AR can be used to drive consumer behavior and improve the shopping experience (Nadeem et al., 2025).

The results of this study highlight the significant impact of AR-driven applications on consumer purchase intention and user experience in the retail environment. The data suggest that AR applications, particularly those that offer high interactivity and realism, positively influence consumer behavior. Purchase intention was shown to increase when consumers interacted with AR features that allowed them to visualize products in a more personalized and immersive way. User experience also improved with higher levels of engagement, indicating that AR applications can enhance customer satisfaction. The study found that both in-store and online AR applications contributed positively to consumers' attitudes towards the retail brand and their likelihood to make a purchase. Moreover, the results pointed to the importance of user satisfaction as a mediator between the features of AR technology and purchase intention, emphasizing that an engaging, seamless experience is critical for driving sales (Li et al., 2025).

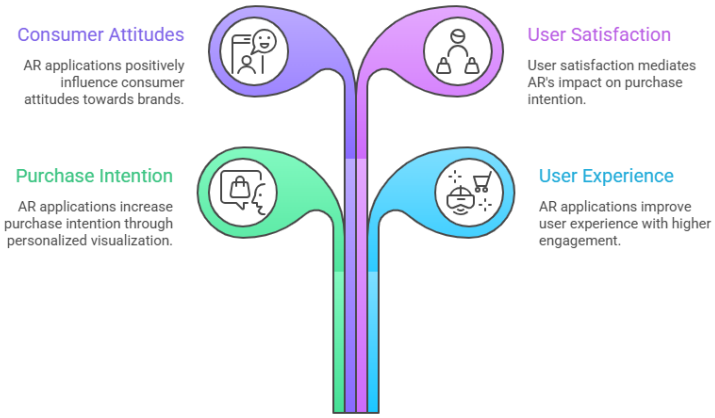

Figure 2. Unveiling the Multifaceted Impact of AR in Retail

The findings of this study are consistent with previous research that has explored the impact of AR on consumer behavior, particularly in retail settings. Studies by (Mkedder et al., 2024) have similarly shown that AR applications can enhance consumer engagement and increase purchase intention by providing immersive experiences. However, this study extends these findings by emphasizing the role of user satisfaction as a mediating factor, a concept less explored in previous literature. While much of the research on AR in retail has focused on its technological aspects, such as the development and deployment of AR systems, this study highlights the psychological and behavioral outcomes associated with AR interactions. In contrast to prior studies that focused on AR as a novelty tool, our findings underscore its practical implications in shaping consumer decision-making processes, both in online and physical retail environments.

The results from this study signify that AR is not just a passing trend but a transformative technology that is reshaping how consumers engage with retail brands and make purchasing decisions. The positive correlation between user satisfaction and purchase intention indicates that AR applications are most effective when they are designed with consumer needs and preferences in mind. Consumers are not simply interested in novelty; they seek value from the AR experience, whether it's through increased confidence in product selection, enhanced personalization, or more engaging interactions. The findings also suggest that the success of AR applications is closely tied to the quality of the user experience. Retailers that provide seamless, intuitive, and interactive AR features are more likely to foster consumer loyalty and drive sales. This highlights the growing expectation for brands to incorporate innovative technologies that improve the shopping journey and meet evolving consumer demands for personalized experiences (Söderström et al., 2024).

The implications of these findings are significant for retailers and businesses looking to adopt AR technology as part of their marketing and sales strategies. By focusing on the interactivity and realism of AR features, retailers can enhance the shopping experience, boost consumer engagement, and, ultimately, increase sales. Moreover, the study suggests that user satisfaction is a crucial factor that can help transform AR interactions into tangible outcomes like higher purchase intention. Retailers should prioritize creating high-quality, user-friendly AR applications that offer clear benefits to consumers, such as personalized product visualizations and virtual try-ons. For retail marketers, these findings advocate for a more customer-centric approach to the implementation of AR, emphasizing that AR's effectiveness is not solely based on technological sophistication but on its ability to meet consumer expectations and deliver value. As the retail landscape continues to evolve, AR technology will play an increasingly important role in shaping consumer experiences and influencing purchasing decisions.

These findings are observed because AR technology inherently provides a level of interactivity and personalization that traditional retail experiences cannot offer. Consumers are drawn to AR applications because they allow them to interact with products in a way that enhances their understanding and confidence in the purchasing decision. The results also reflect a growing trend where consumers seek experiences that are more engaging, informative, and tailored to their individual needs. The ease of use and accessibility of AR applications contribute to their widespread adoption and positive reception. However, the success of AR is not universal, as demonstrated by participants who found certain applications to be cumbersome or lacking in realism. These discrepancies highlight the importance of high-quality AR content and the seamless integration of the technology into the retail environment. In essence, the findings reflect the broader trend of technological adoption in retail, where innovations like AR are only successful when they are both relevant and effectively executed.

Given the insights from this study, future research should focus on refining and optimizing AR applications to enhance their impact on consumer behavior. Retailers should continue to experiment with different AR features, such as product customization, social sharing options, and integration with other technologies like artificial intelligence, to further personalize the consumer experience. Additionally, future studies could explore the long-term effects of AR on brand loyalty and customer retention, as well as how different demographic groups interact with AR in retail settings. From a practical standpoint, businesses looking to implement AR technology should prioritize investing in user-friendly applications that emphasize seamless interaction and realistic product visualization. By doing so, they can improve the overall customer journey and create more meaningful connections with their target audience. The findings of this study contribute to a growing body of literature on AR in retail, and it is imperative that future research continues to explore its potential to reshape the retail industry.

CONCLUSION

The most significant finding of this study is that augmented reality (AR) applications positively influence consumer purchase intention and enhance user experience in retail settings. Specifically, it was discovered that the interactivity and realism of AR applications are key drivers of consumer engagement. Consumers who interacted with AR applications that allowed them to visualize products in a more personalized and immersive manner demonstrated a higher likelihood of making a purchase. This finding is distinct in that it highlights the direct relationship between the quality of AR features and consumer behavior, particularly in the retail context, a link that has not been fully explored in previous studies. Furthermore, the study revealed that user satisfaction mediates the relationship between AR features (such as interactivity and realism) and purchase intention, which provides a deeper understanding of the psychological factors that underpin consumer behavior in AR-driven retail environments.

This research contributes to the existing literature by offering both conceptual and methodological advancements. Conceptually, it expands the understanding of how AR technology impacts consumer behavior by focusing on the factors of interactivity, realism, and user satisfaction. While previous studies have examined AR's role in retail, this study uniquely integrates user satisfaction as a mediating variable, providing valuable insights into the psychological mechanisms that drive purchasing decisions. Methodologically, the research combines both quantitative (survey) and qualitative (interview) approaches, allowing for a more comprehensive analysis of the impact of AR applications on consumer behavior. The mixed-methods design offers a balanced perspective on both the statistical relationships between AR features and purchase intention, as well as the in-depth consumer insights into their AR experience. This dual approach strengthens the robustness of the findings and provides a more holistic view of AR's influence in retail.

This study has several limitations that provide opportunities for future research. First, the sample used in this study was geographically limited to specific retail environments, which may not fully represent global consumer behavior across different cultural and economic contexts. Future studies should consider a more diverse sample, encompassing various regions and demographics to improve the generalizability of the findings. Additionally, the research focused primarily on short-term purchase intention and user satisfaction, leaving open the question of the long-term effects of AR interactions on customer loyalty and retention. Further research could explore how prolonged use of AR applications influences long-term consumer behavior and brand loyalty. Another limitation is the exclusion of some retail sectors, particularly those that may benefit from AR in unique ways, such as high-end fashion or luxury goods. Investigating AR's role in these specific sectors could uncover different dynamics and offer more tailored insights into the potential of AR in retail.

DECLARATION OF AI AND AI ASSISTED TECHNOLOGIES IN THE WRITING PROCESS

During the preparation of this work, the author(s) used Blackbox solely to assist with text translation. After using these tools/services, the author(s) reviewed and edited the content as needed and take full responsibility for the content of the publication.

AUTHOR CONTRIBUTIONS

Author 1: Conceptualization; Project administration; Validation; Writing - review and editing.

Author 2: Conceptualization; Data curation; In-vestigation.

Author 3: Data curation; Investigation.

DECLARATION OF COMPETING INTEREST

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

CONFLICTS OF INTEREST

The authors declare no conflict of interest.

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