The Impact of Augmented Reality on Customer Purchasing Intention

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Abstract:

This study explores the growing role of **Augmented Reality (AR) in digital marketing**, focusing on its impact on **customer purchasing intentions** and the **mediating role of online customer experience**. By blending **physical and digital retail environments**, AR enhances **consumer engagement, trust, and brand perception**, shaping **purchase behavior** through immersive and interactive experiences.

A **mixed-methods approach** was used, incorporating **qualitative experiments** and **quantitative surveys** to measure AR's **ease of use, vividness, personalization, and impact on purchase intention**.

Statistical analyses assessed the relationship between AR, **customer experience, and purchasing behavior**.

Findings indicate that **AR boosts purchase confidence**, reduces **decision-making uncertainty**, and strengthens **brand loyalty**, particularly among younger consumers. However, **technological barriers, privacy concerns, and user adaptation challenges** may hinder adoption.

To maximize AR's potential, businesses should **develop user-friendly applications** with **seamless integration, personalization, and interactivity** while addressing **privacy and security concerns**. Future research should explore **long-term AR adoption trends** and **AI-driven personalization** to further enhance AR experiences. By leveraging AR effectively, businesses can create **engaging digital shopping environments** that drive **customer satisfaction and purchasing intentions**.

Key words: Augmented reality, Purchase intention, Customer experience, Shopping online

1. INTRODUCTION

The integration of Augmented Reality (AR) and Virtual Reality (VR) in digital marketing and retailing has transformed consumer behavior by enhancing interactive and immersive shopping experiences. AR overlays virtual elements onto real-

world environments, improving real-time product visualization and influencing purchase decisions, while VR creates fully immersive digital spaces for consumer interaction (Rauschnabel, 2018; De Reget et al., 2021). These technologies are widely used in industries such as fashion, real estate, and tourism, yet their impact on consumer purchasing behavior in the fashion sector remains underexplored. Studies show that AR-powered applications increase purchase confidence by providing engaging, personalized experiences, such as visualizing menu items before ordering in the food industry (Wang et al., 2021; Xu et al., 2022). However, while AR holds great potential in enhancing consumer trust, engagement, and decision-making, research on its effectiveness in the fashion sector is limited. This study aims to explore AR's role in shaping customer experiences, decision-making processes, and purchasing behavior, focusing on its applications, benefits, and challenges.

This study aims to explore the impact of AR on customer purchasing intention in the fashion sector by addressing several key research questions. First, it seeks to identify the key characteristics of AR that influence customer purchasing behavior and examine how AR enhances online customer experience and decision-making within the fashion industry. Additionally, the study investigates the role of AR in creating immersive brand experiences and shaping purchase intentions. Another critical aspect of this research is

understanding how customer demographics and technological familiarity affect AR adoption in fashion retailing. Furthermore, the study explores the primary barriers and challenges associated with the implementation of AR in this sector. Lastly, it examines the impact of AR integration on customer trust, satisfaction, and brand loyalty, providing a comprehensive understanding of AR's influence on consumer engagement and decision-making in fashion retail.

The study aims to contribute to the growing body of knowledge on immersive technologies and their impact on customer behavior. The findings will provide valuable insights for businesses, marketers, and policymakers in leveraging AR to enhance digital customer engagement in the Fashion sector.

The rest of the paper is organized as follows: Section 2 offers a comprehensive review of the literature and the development of hypotheses. Section 3 outlines the methodology. Then, the study presents the test results in Section 4 and the conclusion in Section 5.

2. Literature review and Hypothesis development

Augmented Reality (AR) is a technology that overlays digital information or virtual objects onto the real-world environment, resulting in an enhanced user experience (Negm, 2024). This innovative technology enables consumers to engage with virtual aspects in a way that is directly related to the actual world, creating immersive experiences that connect the digital and

physical realms (Ibrahim et al., 2023). Applying augmented reality (AR) in retail processes enhances consumer involvement by providing immersive, interactive, and instructive experiences. This fosters both practical and pleasurable evaluations of the technology (Negm, 2024). Using augmented reality (AR) in marketing, specifically in the real estate industry to promote house sales, can successfully engage clients and impact their intention to buy by leveraging AR's creative and fascinating features (Ibrahim et al., 2023).

Furthermore, the impact of AR on consumer buying habits goes beyond just being a new technology, radically reshaping how consumers interact with brands and their intentions to make purchases. By incorporating the hedonic and utilitarian aspects of augmented reality (AR), consumers are more inclined to engage with brands, consume content that is centered around the brand, and actively contribute to brand development (E. Negm, 2024). The interdependence between augmented reality technology and customer behavior demonstrates the significant influence of AR on altering consumer perceptions and preferences in the current marketplace (Ibrahim et al., 2023).

As augmented reality (AR) technology progresses and develops, its ability to completely transform marketing strategies and influence consumer buying behaviors becomes more and more evident. This positions AR as a key tool for improving brand interaction and motivating consumers to make purchases

(Negm, 2024). The complex and diverse character of Augmented Reality (AR) as a technology that combines digital and physical worlds to create immersive experiences emphasizes its significance in transforming shopping procedures and enhancing brand involvement. AR technologies enhance purchase intentions and brand engagement by providing customers with engaging, interactive, and instructive experiences that foster utilitarian and hedonic values (Negm, 2024). The effective utilization of augmented reality (AR) in marketing channels, specifically observed in the real estate industry, has substantial potential for businesses to engage clients and enhance sales through innovative and engaging AR apps (Ibrahim et al., 2023).

As businesses increasingly use augmented reality (AR) in their marketing strategies, the way AR technology and consumer behavior interact will continue to influence how brands communicate with customers and influence their purchasing decisions in the digital age (Datere, 2023).

Purchase intention refers to the likelihood that a consumer will buy a product or service. It is an important indication for businesses to predict potential sales and revenue. Extensive research has shown a strong and positive connection between the intention to purchase and genuine procurement actions. This highlights the importance for marketers to consider this concept when developing their strategies. By focusing on improving purchase intention with cutting-edge technology such as

augmented reality, businesses can potentially increase their conversion rates and enhance overall profitability. Moreover, purchase intention serves as a useful tool for marketers to evaluate the effectiveness of their promotional efforts. By carefully examining consumer preferences and deliberate actions towards a product or service, companies can adjust their marketing strategies to better meet the needs and preferences of their target audience. Understanding the factors that influence purchase intention, such as product quality, brand reputation, and pricing, can help marketers create more persuasive value propositions and communication strategies. Essentially, cultivating positive buy intentions among consumers can drive engagement, loyalty, and repeat purchases. In summary, the concept of purchase intention is the main focus in marketing strategies, guiding businesses toward more effective consumer engagement and conversion results. Augmented reality technology allows marketers to enhance the shopping experience, foster brand loyalty, and ultimately increase sales. By leveraging insights on customer behavior and preferences, companies can create tailored experiences that strongly engage with their target audience, ultimately driving purchase intent. In the future, businesses must continue exploring innovative methods to utilize technology and customer insights to maximize purchase intention and promote sustainable growth in a highly competitive market.

2.1 Hypothesis development

H1: There is a direct influence of Augmented Reality on Purchasing Intention.

Augmented Reality (AR) enhances consumer purchasing intention by providing an immersive and interactive shopping experience. By allowing customers to visualize products in real-world settings before purchase, AR increases confidence in decision-making and reduces uncertainty. This engagement fosters trust and brand loyalty, ultimately leading to higher conversion rates and increased consumer willingness to buy.

AR contributes to brand image by positioning companies as innovative and technologically advanced. Brands that integrate AR into their marketing strategies create engaging consumer experiences that enhance perceptions of modernity and exclusivity. As a result, consumers associate these brands with forward-thinking and high-quality products, strengthening brand loyalty and positive word-of-mouth.

H3: Augmented Reality positively influences Customer Experience.

By offering interactive product visualizations and personalized experiences, AR significantly improves customer experience. The technology allows consumers to engage with products in a virtual environment, leading to better-informed decisions and increased satisfaction. Businesses using AR can enhance consumer

interactions, making shopping more convenient, engaging, and enjoyable.

H4: There is a significant relationship between Customer Experience and Purchasing Intention.

A positive customer experience plays a crucial role in shaping purchasing decisions. When consumers have seamless and engaging interactions with a brand, they develop trust and emotional connections that increase their intent to purchase. AR's ability to create enjoyable and user-friendly experiences strengthens this relationship, driving higher conversion rates.

H5: The impact of Augmented Reality on Customer Experience is moderated by Product Characteristics.

The effectiveness of AR in enhancing customer experience depends on product characteristics such as complexity, uniqueness, and usability. Products that benefit from AR visualization, such as fashion and home décor, see higher consumer engagement. Conversely, products with simpler purchasing processes may experience a less pronounced impact from AR applications.

H6: Positive Customer Experience significantly enhances Brand Image.

Customer experience is a key driver of brand image, as positive interactions foster trust and brand loyalty. Consumers who have enjoyable experiences with AR-enhanced shopping are

more likely to develop favorable perceptions of a brand. This leads to higher customer retention, positive recommendations, and an overall strengthened brand reputation.

H7: A Positive Brand Image significantly increases Customer's Purchasing Intention.

A strong brand image positively influences consumer purchasing decisions by reinforcing trust, credibility, and perceived product value. Consumers are more likely to buy from brands they perceive as reputable and high-quality. Businesses leveraging AR to enhance brand perception can effectively boost purchasing intention and long-term customer loyalty.

These hypotheses collectively explore the interconnected roles of AR, brand image, product characteristics, and customer experience in influencing consumer purchasing behavior.

3. METHODOLOGY
3.1 Data

Data will be collected through structured surveys and experimental observations. The pre-experiment survey gathers demographic information and baseline attitudes toward AR, while the post-experiment survey assesses changes in purchase intention and brand perception.

Variable	Questions	Source
Purchasing Intention	Questionnaire section 2: Q1, 2, 3, 4, 5, 6, 7	Andrija Bernik, 2022 "Influence of Augmented Reality on Purchase Intention"
Brand Image	Questionnaire Section 3: Q1, 2, 3, 4, 5, 6, 7	Farah Emam Ahmed, Sameh Ali, Yasser Tawfik Halim "Nexus among augmented reality, customer purchase intention, customer experience, and customer brand relationship: Application on Vichy brand" MSA-Management science journal ISSN 2974-3036 Volume: 2, Issue: 3, Year: 2023, pp.18-48
Customer Experience	Questionnaire Section 4: Q1, 2, 3, 4, 5	Farah Emam Ahmed, Sameh Ali, Yasser Tawfik Halim "Nexus among augmented reality, customer purchase intention, customer experience, and customer brand relationship: Application on Vichy brand" MSA-Management science journal ISSN 2974-3036 Volume: 2, Issue: 3, Year: 2023, pp.18-48
Purchasing intention	Questionnaire Section 5: Q1, 2, 3, 4, 5, 6, 7	The Impact of Customer Experience and Customer Engagement on Behavioral Intentions: Does Competitive Choices Matter? Volume 13 - 2022 | https://doi.org/10.3389/fpsyg.2022.864841
Product Characteristics	Questionnaire Section 6: Q1, 2, 3, 4, 5, 6, 7	The Impact of Augmented Reality on Product Purchase Intention in the Swedish Eyewear Industry AUTHORS: Wakim, Riad Samir Drak Al Sebai, Lara Miladinovic, Mira (JÖNKÖPING, 2018)
Impact of customer experience on brand image	Questionnaire Section 7: Q1, 2, 3, 4	The Impact of brand image and customer satisfaction on brand loyalty in the Kurdistan region (Mazn et Rebwar ,2022) : DOI:10.13140/RG.2.2.28126.10565
Role of Augmented Reality	Questionnaire Section 8: Q1, 2, 3, 4, 5	Investigating the Role of Augmented Reality in Supporting Collaborative Learning in Science Education: A Case Study Bayan Kuanbayeva1, Nurgul Shazhdekeyeva1, Galiya Zhusupkaliyeva1, Kaussar Mukhtarkyzy2, Gulmira Abildinova iJEP | eISSN: 2192-4880 | Vol. 14 No. 1 (2024)
Impact of brand image on purchasing intention	Questionnaire Section 9: Q1, 2, 3, 4, 5, 6	The relationship between brand image and purchase intention in luxury brands: a case study of Louis Vuitton (ZHONG Miao May, 2020)

Theoretical Farmwork
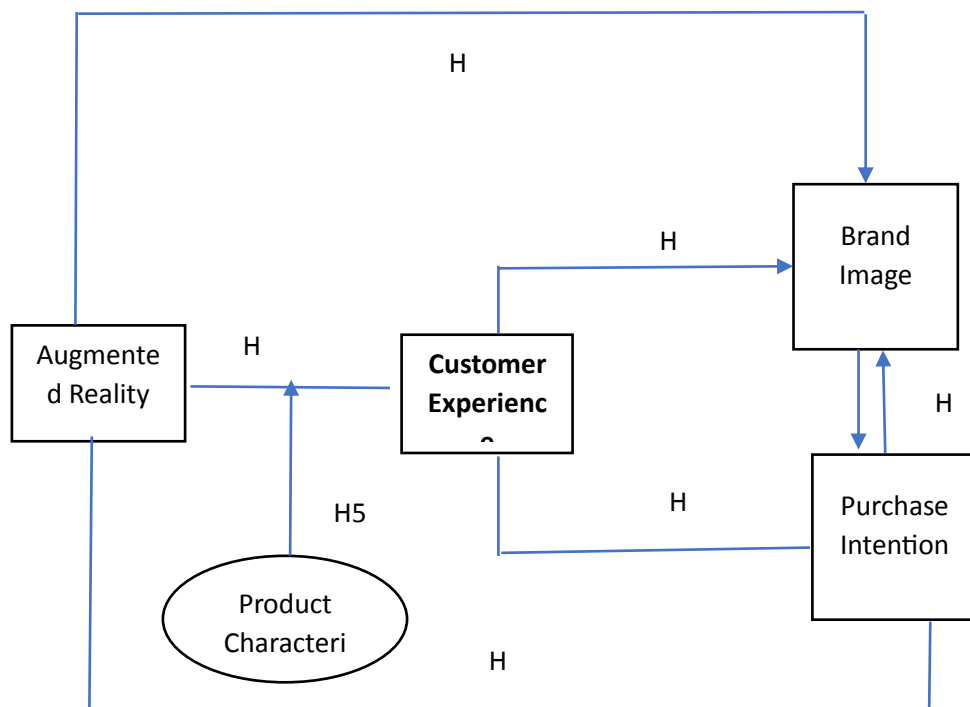
The provided model illustrates the relationship between **Augmented Reality (AR), Customer Experience, Brand Image, and Purchase Intention** within a consumer behavior framework. It consists of several hypotheses (H1–H7) that describe the interactions between these variables.

This model suggests that AR improves customer experience and brand image, which in turn enhances purchase intention. Additionally, product characteristics influence how effective AR

is in shaping customer experience. The relationships between these variables help businesses understand how AR can be strategically leveraged to boost sales and consumer engagement.

4. DATA ANALYSIS AND RESULTS
4.1 Results of Qualitative Analysis
4.1.2 Qualitative Interviews with Retail Customers

Customer Adoption of AR in Shopping

Customers' perspectives on AR adoption were gathered through survey responses that included qualitative elements such as **usage experiences, ease of use, perceived benefits, and obstacles to adoption**. Key themes that emerged include:

Ease of Use and Learning Curve

A common theme in customer feedback was **ease of use**, with many respondents emphasizing that **intuitive AR applications** are crucial for encouraging adoption. Customers who had **previous experience with AR tools** (such as virtual fitting rooms or product visualization tools) found the technology **engaging and valuable**. However, some customers **unfamiliar with AR** faced **a learning curve** and reported difficulty **navigating AR interfaces**.

AR's Influence on Purchase Decisions

Another recurring theme was how AR directly influenced **purchase intention**. Customers stated that **AR helped them feel more confident** about their purchases by allowing them to visualize products in a **realistic setting**. Some customers even indicated that **they would not have completed a purchase without AR**.

Enhanced Customer Experience

Customers noted that AR improved their **overall shopping experience** by adding an **interactive and engaging element**. Many described AR as **"fun" and "exciting,"** making online shopping more dynamic.

Trust in Virtual Representations

Some respondents expressed **concerns about accuracy** in AR renderings, particularly regarding **size, color, and material quality**. Customers noted that while AR provided a **general sense of how a product would look**, they still had **doubts about real-life accuracy**.

<u>Comparison with Traditional Shopping</u>

Consumers compared **AR-enhanced online shopping** to **traditional in-store shopping**. Many stated that AR **bridged the gap** between online and offline experiences but did not entirely replace the **need to physically see and touch products**.

Comparison Insights:

Feature	AR Shopping	Traditional Shopping
Convenience	High (shop from anywhere)	Medium (requires travel)
Product Examination	Good (3D views)	Excellent (touch and feel)
Decision Confidence	High for visuals, low for material feel	Highest confidence
Return Likelihood	Lower than standard online shopping	Lowest
Shopping Experience	Engaging and innovative	Familiar

<u>Challenges and Barriers to Adoption</u>

While many customers found AR **useful**, others faced **technical difficulties** or had **low trust in AR-based purchases**.

4.3 The Quantitative Analysis

This section presents the **quantitative findings** derived from the dataset, focusing on **demographics, descriptive statistics, reliability and validity testing, correlation analysis, regression modeling, and hypothesis testing**. This comprehensive analysis

provides empirical evidence regarding the **impact of Augmented Reality (AR) on purchase intention and customer experience**.

Table: Reliability Scores

Variable	Cronbach's Alpha
AR Experience	0.699
Purchase Intention	0.689
Brand Image	0.447
Customer Experience	0.606

Interpretation:

- **AR Experience and Purchase Intention** have **strong reliability** (Cronbach's Alpha > 0.6).
- **Brand Image** has a **low-reliability score (0.447)**, suggesting **some inconsistencies** in the responses.
- **Customer Experience** shows **moderate reliability (0.606)**.

Table: Descriptive Statistics

Variable	Mean Score
AR Experience	4.28
Purchase Intention	4.16
Customer Experience	4.32
Brand Image	4.21

Insights:

- **AR Experience has a high average score (4.28)**, indicating that users **find AR beneficial**.
- **Customer Experience (4.32) is higher than Brand Image (4.21)**, suggesting that **experience matters more than brand reputation**.
- **Purchase Intention is strong (4.16), reinforcing that AR positively influences buying behavior**.

variables.

Table: Correlation Analysis

Variables Compared	Correlation Coefficient (r)	p-value
AR Experience vs Purchase Intention	0.862	**p < 0.001**
AR Experience vs Brand Image	0.031	0.526 (Not Significant)
Customer Experience vs Purchase Intention	0.852	**p < 0.001**

Figure 1 Correlation analysis

Key Findings:

- **AR Experience has a strong correlation with Purchase Intention (r = 0.862, p < 0.001)**.
- **Customer Experience is also a strong predictor of Purchase Intention (r = 0.852, p < 0.001)**.

- **Brand Image has a weak, insignificant relationship with Purchase Intention**.

Table: Regression Analysis Summary

Variable	Coefficient (β)	p-value
AR Experience	0.444	**<0.001**
Customer Experience	0.407	**<0.001**
Brand Image	0.012	0.735 (Not Significant)

Figure 2Regression analysis summary

Interpretation:

- **AR Experience and Customer Experience are significant predictors of Purchase Intention**.
- **Brand Image has no significant impact**.
- *Table: Hypothesis Testing*

Hypothesis	Supported?	Explanation
H1: AR Experience → Purchase Intention	☐ **Supported**	Strong correlation (r = 0.862, p < 0.001) and significant regression coefficient (β = 0.444).
H2: AR Experience → Brand Image	☐ **Not Supported**	Weak correlation (r = 0.031, p = 0.526).
H3: AR Experience → Customer Experience	☐ **Supported**	Customer Experience significantly correlated with AR Experience (r = 0.852).
H4: Customer Experience → Purchase Intention	☐ **Supported**	Significant regression impact (β = 0.407, p < 0.001).

H5: Product characteristics → AR and Customer Experience	☐ Not Supported	AR Score (p = 0.859) and Product Characteristics (p = 0.971) are not significant predictors.
H6: Customer Experience → Brand image	☐ Not Supported	Pearson Correlation: r=−0.025r = -0.025r=−0.025, p-value = 0.623 The correlation between Customer Experience Score and Brand Image Score is very weak and not statistically significant.
H7: Customer Experience → Purchase Intention	☐ Supported	Pearson Correlation: r=0.829r = 0.829r=0.829, p-value < 0.001 There is a strong positive correlation between Brand Image Score and PI Score, meaning that as brand image perception improves, purchase intention also increases.

5. Conclusion

This study set out to investigate the **impact of Augmented Reality (AR) on customer purchase intention**, with a focus on the role of **customer experience** as a mediating factor. The research findings confirm that **AR technology plays a significant role in enhancing online shopping experiences, increasing customer confidence, and improving purchase decision-making**. Through both **qualitative insights and quantitative analysis**, the study provides strong empirical evidence that AR is not just a novelty but a **valuable tool for businesses** looking to enhance customer engagement and drive sales.

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