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TRANSFORMING CONSUMER EXPERIENCE THROUGH THE APPLICATION OF AUGMENTED OPTIMIZATION MARKETING IN RETAIL MARKETING STRATEGY

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Abstract

This research endeavors to delve into the multifaceted role of Augmented Reality (AR) as a pivotal marketing tool within the evolving landscape of the retail sector in the aftermath of the pandemic. The research methodology adopted encompasses a quantitative approach, employing the robust Structural Equation Modeling (SEM) - Partial Least Squares (PLS) model. The process of data acquisition unfolded through a meticulously crafted online survey utilizing a Google Form-based questionnaire. The survey garnered responses from a diverse sample of 100 individuals who had actively engaged with AR features in their retail product purchases on at least two occasions. The research findings cast a spotlight on the considerable potential that AR holds in not only augmenting customer satisfaction but also in wielding influence over consumer purchasing behavior within the context of the post-pandemic retail sector. The implications drawn from these findings are transformative, suggesting that retail entities possess the capacity to strategically optimize AR technology as a dynamic and effective marketing tool. This optimization, in turn, stands poised to elevate consumer experiences, amplify levels of customer satisfaction, and catalyze the overall growth trajectory of businesses operating within the retail sector. The study introduces the concept of "Augmented Optimization Marketing," providing a nuanced perspective on the strategic utilization of AR in enhancing marketing endeavors. In essence, this research paints a comprehensive panorama of the strategic significance of AR in shaping the future landscape of retail marketing.

Keywords: Marketing, Customer Satisfaction, Interactivity, Purchase Experience

JEL Classification: D12, M31, C83, L81, O33

1. INTRODUCTION

The global dynamics triggered by the pandemic have had a significant impact on various aspects of human life, including the economy and changes in consumer behavior (Laato et al., 2020; Pantano et al., 2020). This pandemic is forcing the retail sector, as a key component in the global economy, to face challenges that have never been imagined before. Social restrictions, physical store closures, and dramatic changes in consumer preferences are the main obstacles that are pushing retail industry players to look for new innovations to remain relevant in the face of post-pandemic dynamics (Sheth, 2020). Facing the complexity of changes that are occurring, the role of technological innovation is the main key in adapting (A. Kumar et al., 2020). The presence of Augmented Reality technology

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amidst global dynamics is considered a potential and attractive solution to improve the quality of consumer experience in the retail sector. The use of AR technology has become a major focus, not only as a response to changes in consumer behavior triggered by the pandemic, but also as a strategic action to face the dynamic evolution in the retail industry which continues to grow (Ayman, 2023).

The choice of AR as the focus of this research was not done arbitrarily. The decision to research AR was based on its unique background, with a history of developing the technology and its ever-expanding applications, particularly in the retail sector. The use of AR by leading brands such as IKEA, Sephora, L'Oréal, and Ray-Ban reflects the technology's success in creating authentic and innovative consumer experiences (T. Kumar, 2021). Therefore, this research not only involves a conceptual analysis of AR, but also provides a concrete view of how this technology is applied in a real context by retail industry players (Alves & Luís Reis, 2020).

A study that McKinsey has conducted on companies and the results show that the growth rate of online sales has increased from 14% annually to 25% weekly, however, pre-pandemic consumers preferred to visit physical stores (Briedis et al., 2020). Therefore, retailers are expected to increase their investment in the online and digital domains in response to the decline in the frequency of consumer visits to their physical stores (Sheth, 2020).

The challenges faced by the retail sector in improving the consumer experience raise fundamental questions that need to be answered. In facing the complexity of changes that are occurring, technological innovation, especially Augmented Reality, has emerged as a potential solution to renew the consumer experience in the retail sector. How, specifically, can AR improve the consumer experience in the post-pandemic retail sector? What impact will post-pandemic marketing have on business and consumer strategies in this sector? These questions are the main focus in seeking a deep understanding of the role of AR and its relevance in facing post-pandemic challenges.

Answering this question, this research aims to reveal how the role of AR as a marketing medium in the retail sector works in generating satisfaction for customers. Through this research, existing knowledge gaps can be addressed by exploring how Augmented Reality can be a key factor for successful marketing strategies in the post-pandemic retail sector. Therefore, this research not only brings a new perspective on the role of technology in changing the retail sector, but also contributes conceptual ideas and practical insights that can advance marketing progress in the post-pandemic era.

2. LITERATURE REVIEW AND HYPOTHESES

2.1. Dynamics of the Retail World

The significant disruption caused by the pandemic indirectly impacts consumer behavior patterns in the retail sector. Global society is experiencing a transformation in their purchasing preferences and routines as a result of social distancing, lockdowns and health concerns. Consumers are now adopting a more selective approach to purchasing, prioritizing essential needs and increasing demand for online services (Du et al., 2022; Rejeb et al., 2023). Empirical research has noted a quite striking shift from offline purchasing transactions to online purchasing, which is forcing retailers to adapt in ways that have never happened before (Pantano et al., 2020).

Retail industry players are not only faced with changes in consumer behavior, but also with transformations in business governance and marketing strategies (Hilken et al., 2022). Success for retailers lies in their ability to adapt business models quickly, by integrating digital solutions, improving online presence and optimizing customer experience (King & Murillo, 2023; Wang et al., 2023). Post-pandemic marketing does not only focus on aspects of product sales, but also emphasizes building consumer trust and providing added value in accordance with emerging needs and expectations.

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2.2. Technology Adoption on Consumer Behavior

Various factors, including individual, social, and situational factors influence technology adoption by consumers. Research on technology adoption such as the Technology Acceptance Model (TAM) has emphasized the importance of consumer perceptions of the usefulness and ease of use of technology (Saprikis et al., 2020). Additionally, factors such as trust, security and personal needs also play a key role in motivating consumers to adopt new technologies (Song et al., 2019). The need for technological solutions in the post-pandemic era, enabling minimal physical contact and a safe shopping experience could be a key driving factor.

The importance of AR technology has become increasingly prominent in the post-pandemic context, where consumers are looking for safer and more efficient shopping experiences. AR not only provides innovative solutions to facilitate online purchases (T. W. E. Suryawijaya et al., 2023), but also presents new ways for consumers to interact with products virtually (T. Kumar, 2021). In a situation where social distancing and physical distancing policies still apply, AR has become an important tool in meeting consumers' needs to shop without leaving their homes.

2.3. Utilization of AR Technology in Retail Marketing

In the retail sector, advances in Augmented Reality (AR) technology have created a significant wave of innovation. Although initially known in the context of gaming and entertainment applications, the application of AR in the retail sector continues to grow, making a positive contribution to the shopping experience with higher elements of interactivity and personalization. Some leading companies, such as IKEA, have successfully integrated AR into their marketing strategies (Alves & Luís Reis, 2020), creating a virtual shopping environment that provides added value to consumers. The use of AR in the retail sector has also introduced an additional realistic and interactive dimension to the consumer experience (T. Suryawijaya & Aqmala, 2023). Consumers can now test products virtually, change colors and see how they can be integrated into the context of their daily lives (Gatter et al., 2022). The significance of using AR is increasingly felt, especially in a pandemic situation when physical visits to stores are limited. In this context, AR provides an alternative solution that allows consumers to stay involved in the shopping process without having to leave the comfort of their home.

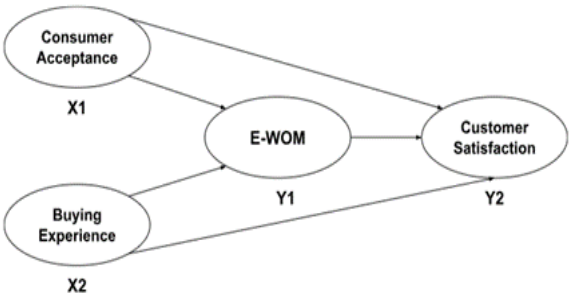

Figure 1. Research Conceptual Framework
Source: Author's elaboration, 2023

Based on the literature review above, this research seeks to explore how the application of AR in the retail sector can be an effective strategy for improving consumer experience amidst post-pandemic dynamics, as well as providing insight into the factors that influence consumer adoption of this technology through a research conceptual framework.

2.4. Hypotheses

The relationships between variables that will be tested in this research (see Figure 1) is translated as follows:

H1: Influence of X1 (Consumer Acceptance) on Y1 (E-WOM).
H2: Influence of X2 (Purchasing Experience) on Y1 (E-WOM).
H3: The Influence of X1 (Consumer Acceptance) on Y2 (Customer Satisfaction).
H4: Influence of X2 (Purchasing Experience) on Y2 (Customer Satisfaction).
H5: Influence of Y1 (E-WOM) on Y2 (Customer Satisfaction).

3. RESEARCH METHODS

This research adopts a quantitative approach by applying the Structural Equation Modeling-Partial Least Squares (SEM - PLS) model. This approach involves factor analysis to gain an understanding of the factors that influence each other and to estimate the relationships between the variables involved in the research (Hair et al., 2021). The selection of this method is based on optimality considerations, especially in situations where the number of samples is limited, but still meets the minimum requirements for the number of samples required. As a parameter, the sample size in this study was determined as 100 data (Pajo, 2022).

The data acquisition process in this research implemented an online survey method using a Google Form-based questionnaire over a three month period, namely from March to May 2023. This questionnaire was designed with various questions and statements adapted to the distribution of variables, as detailed in Table 1, with the aim of collecting data and information from respondents who are the targets of the research. The sampling method used in this research is Purposive Sampling (Levy & Lemeshow, 2013; Sudaryono, 2017; Gulo & Hardiwati, 2017), where data from respondents who meet the criteria for experience in purchasing retail products using the Augmented Reality feature for more than two purchases will be selected for analysis.

This research applies indicator measurements in a questionnaire using an interval scale ranging from 1 to 10. The choice of this type of scale is based on considerations to provide optimal flexibility in interpreting research results (Neuman, 2013; Gulo & Hardiwati, 2017). The data structure in this paper contains four variables based on Augmented and Virtual Reality Marketing theory in Blokdyk (2018), including X1 (Consumer Acceptance), X2 (Purchase Experience), Y1 (E-WOM), Y2 (Customer Satisfaction). Next, these variables will be distributed into indicators (Table 1) so that they can be measured in the questionnaire.

Table 1. Variable Distribution

Variable	Indicator
X1 (Consumer Acceptance)	X1.1. Ease of shopping using AR applications
	X1.2. Convenience of shopping using AR applications
	X.1.3. Consumer decisions to shop after using AR
	X.1.4. Consumer perception of products after using AR
X2 (Purchasing Experience)	X2.1. Customer response to AR features
	X2.2. Customer affection when using AR features
	X2.3. Digital interactivity while shopping
Y1 (E-WOM)	Y1.1. Customer trust in AR-based services
	Y1.2. Product credibility
	Y1.3. Use of AR in choosing products
Y2 (Customer Satisfaction)	Y2.1. Make a repeat purchase
	Y2.2. Recommend to others
	Y2.3. Provide positive reviews of services and products

Source: Author's elaboration, 2023

Furthermore, the indicators mentioned above will be interpreted as a series of questions and statements that will be included in the research questionnaire (see Table 2). Next, the collected data will be analyzed using smartPLS 4.0 software with the aim of carrying out variable analysis. This analysis process involves three testing models, namely evaluation of measurement models, evaluation of structural models, and testing of relationships between variables.

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Table2. **Research Questionnaire**

1.	I find it easy to shop using AR
2.	How comfortable are you when using AR applications for shopping?
3.	The use of AR influences My decision to make a purchase
4.	What is your perception of the product after using the AR application?
5.	How do you respond to the AR features provided by the service?
6.	How do you feel when you use AR features while shopping?
7.	What level of digital interactivity do you experience when shopping?
8.	How much do you trust AR-based services?
9.	How important is product credibility in your purchasing decision?
10.	To what extent does using AR help you in choosing the desired product?
11.	AR service features influenced my decision to make a repeat purchase
12.	AR services have enhanced my shopping experience
13.	I would recommend this service and product to others
14.	To what extent do you provide positive reviews of services and products presented through AR applications?

Source: Author's elaboration, 2023

4. RESULTS AND DISCUSSION

4.1. Respondent Profile

The profiles of 149 participants have been analyzed to provide a comprehensive picture of the data distribution, as detailed in Table 3. From this data, it can be seen that participants tend to be evenly distributed between men and women, with a difference of around 16.78%. There is a significant dominance of respondents who have utilized the Augmented Reality (AR) feature in the purchasing process, reaching a percentage of more than 95%. In terms of demographics, the majority of participants came from East Java Province and DKI Jakarta Province, each contributing more than 10% of the total number of participants.

This indicates that the use of AR is more familiar in the two provinces. Purchase intensity through AR-based features also shows positive performance, with average purchases ranging from two to four times, with a difference of around 8.73% for higher purchase intensity, namely more than four times.

Almost half of the participants reported that they purchased fashion products, such as clothes, shoes, dresses, and the like, by utilizing AR features. Apart from that, the dominant purchases via the AR feature are made through various social media such as Instagram for Business, Tiktok, and other platforms. Overall, the results of this analysis provide a more in-depth picture of participant characteristics in the context of using AR in the product purchasing process.

Table 3. **Participant Distribution**

Profile	Classification	Num	Qty (%)
Gender	Male	62	41,61%
	Female	87	58,39%
Have you ever made a purchase using the AR feature?	Once	143	95,97%
	Never	6	4,03%
Residence	Aceh	0	0,00%
	North Sumatra	1	0,67%
	South Sumatra	0	0,00%
	West Sumatra	1	0,67%
	Bangka Belitung	2	1,34%
	Bengkulu	1	0,67%
	Riau	0	0,00%
	Riau islands	2	1,34%
	Jambi	6	4,03%
	Lampung	4	2,68%
	West Kalimantan	7	4,70%
	East Kalimantan	4	2,68%
	South Kalimantan	4	2,68%
	Central Kalimantan	3	2,01%
	North Kalimantan	5	3,36%
	Banten	2	1,34%
	DKI Jakarta	22	14,77%
	West Java	9	6,04%
	Central Java	12	8,05%
	Special Region of	7	4,70%
	Yogyakarta	38	25,50%
	East Java	9	6,04%
	Bali	0	0,00%
	East Nusa Tenggara	1	0,67%
	West Nusa Tenggara	0	0,00%
	Gorontalo	0	0,00%
	West Sulawesi	1	0,67%
	Central Sulawesi	1	0,67%
	North Sulawesi	0	0,00%
	Southeast Sulawesi	0	0,00%
	South Sulawesi	1	0,67%
	North Maluku	0	0,00%
	Maluku	0	0,00%
	West Papua	1	0,67%
	Papua	0	0,00%
	Central Papua	2	1,34%
	Papua Mountains	1	0,67%
	South Papua	0	0,00%
	Southwest Papua	2	1,34%
	WNA/Foreign		
Purchase Intensity Using AR Features	Only once	2	1,34%
	2 - 4 times	77	51,68%
	More than 4 times	64	42,95%
Type of Goods Purchased	Cosmetics (Lipstick,	34	22,82%
	Powder, Etc.)	70	46,98%
	Fashion (Clothes,	39	26,17%
	Shoes, Dresses, Etc.)		
	Accessories		

	(Watches, Glasses, Jewelry, Etc.)		
Shopping Media Using AR Features	E-Commerce	43	28,86%
	Marketplace (Shopee, LazLive, Amazon Fashion's, Dll)	16	10,74%
	Application from Retail Stores	84	56,38%
	Media Social (Instagram for Business, Tiktokshop, Dll)		

4.2. Evaluation of Measurement Models

Evaluation of the measurement model was carried out (inner model) by applying a convergent validity test, where this aspect was explored by examining the Convergent Validity Test value, with a minimum expected Average Variance Extracted (AVE) value greater than 0.5. In addition, a reliability test is carried out by assessing Composite Reliability, which should reach a value greater than 0.7.

Table 4. Results of Convergent Validity Test and Reliability Test

Variable	CR	Interpretation	AVE	Information
Consumer Acceptance (X1)	0.870	Reliable	0.626	Valid
Buying Experience (X2)	0.806	Reliable	0.581	Valid
E-WOM (Y1)	0.848	Reliable	0.651	Valid
Customer Satisfaction (Y2)	0.878	Reliable	0.643	Valid

Convergent validity test (see Table 4) shows valid and reliable results according to the criteria explained above. Furthermore, the results of the discriminant validity analysis in Table 5 show an appropriate match, considering that the value of variable Y2 shows a correlation with all the variables contained (X1, X2, and Y1). Therefore, it can be concluded that the data obtained in this research can be considered valid data.

Table 5. **Discriminant Validity Test Results**

	X1	X2	Y1	Y2
X1				
X2	0.808			
Y1	0.576	0.923		
Y2	0.589	0.705	0.841	

4.3. Structural Model Evaluation (Outer Model)

Table 6. Structural Model Evaluation Results Based on the R-Square Test

	R-Square	R-Square Adjusted
Y1	0.408	0.396
Y2	0.480	0.463

In this research, an evaluation of the structural model was carried out using the R-Square test (see Table 6) which produces a number close to 1, even though it has yet to reach the middle value of the R-Square test criteria range, namely 0 to 1. Thus, the model used to measure variability in the dependent variable in this study can be considered adequate. Overall, the results of the analysis indicate that this study shows good reliability and validity of the data, with the model adequately explaining the variability present in the dependent variable.

Table 7. Structural Model Evaluation Results Based on the F-Square Test

	X1	X2	Y1	Y2
X1			0.013	0.052
X2			0.352	0.007
Y1				0.292
Y2				

Table 7 provides an overview of the results of the F Square test, which shows the relative contribution of the independent variable to the dependent variable in the structural framework of the model. Overall, the contribution of the independent variables shows quite a significant impact, which is manifested through the influence of variable X1 on

Y1 and variable X2 on Y2, even though these variables have a less striking contribution value.

4.4. Hypothesis Tests Results

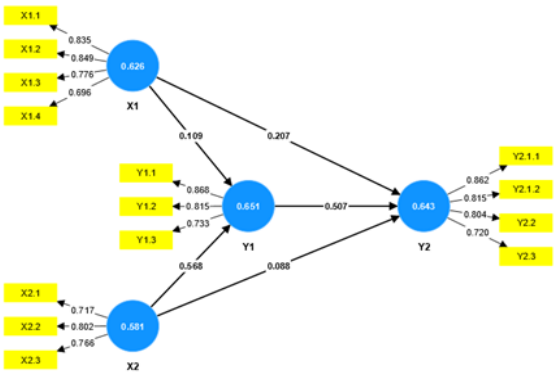

Figure 2. PLS Analysis Results

Hypothesis testing is carried out by analyzing the Path Coefficient value (see Table 8) which describes the relationship between variables X1 and Y1. In this analysis, it was found that X1 had an influence of 0.138 units on Y1. Likewise, variable X2 shows a path coefficient of 0.556 on Y1, indicating an influence of 0.556 units on Y1. In addition, a more significant relationship was found between variables Y2 and Y1 with a path coefficient of 0.656, indicating a contribution of 0.656 units of Y1 to the increase in Y2. The hypothesis testing process also involves analyzing the Total Effects value (See Table 9).

Table 8. Path Coefficients

	X1	X2	Y1	Y2
X1			0.138	
X2			0.556	
Y1				0.656
Y2				

Table 9. Total Effects Results

	Original Sample	Mean	St-Dev	T Statistic	P Values
X1 -> Y1	0.109	0.116	0.105	1.038	0.299
X1 -> Y2	0.262	0.258	0.125	2.102	0.036
X2 -> Y1	0.568	0.561	0.085	6.695	0.000
X2 -> Y2	0.376	0.378	0.102	3.686	0.000
Y1 -> Y2	0.507	0.515	0.102	4.973	0.000

The results of the total effect analysis on the original sample provide an overview of the relative impact of the independent variables (X1 and X2) on the dependent variables (Y1 and Y2) within the model framework. It can be concluded that X1 has a less significant impact on Y1, but has quite a large influence on Y2, which is indicated by the relevant p-value. On the other hand, X2 has a very significant impact on Y1 and Y2, indicated by a very low p-value. In addition, the relationship between Y1 and Y2 also shows high significance. These findings provide a deeper understanding of the relative contribution of each variable to other variables in the model, which can play a role in enriching the understanding of relationships within the framework of this research.

4.5. Discussion

This research holistically explores the concept of Augmented Marketing as a focus to gain a deep understanding of how optimizing Augmented Reality can increase the effectiveness of marketing strategies. (Zhu, 2022), especially in a post-pandemic context. The unique challenges faced by the retail sector in the post-pandemic era are forcing significant transformations in consumer behavior (Cocchi, 2019). A deep understanding of the new preferences that emerge in these situations is crucial for designing successful business strategies (Tan et al., 2022). This research specifically focuses on developing the Augmented Marketing concept as an innovative solution to overcome these challenges. By understanding how AR can increase brand visibility, consumer engagement, and sales

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growth, we can outline the role of Augmented Reality in responding to increasingly sophisticated and dynamic customer needs (Tom Dieck et al., 2018).

Figure 3. How Advertisers See and Use AR

Through this research, the choice of Augmented Reality as the focus of research is not just arbitrary, but is a response to shifts in consumer paradigms and the need for innovation in the marketing context (Wu et al., 2023). By involving the try-on concept in AR (see Figure 3), this research not only covers aspects of using AR to increase brand visibility, but also explores how AR can be applied to increase consumer interactivity and, ultimately, support sales growth.

Through a case study approach involving leading brands that have successfully implemented Augmented Marketing strategies in facing post-pandemic challenges (Bona et al., 2018; T. Suryawijaya & Aqmala, 2023), this research compares the real picture of the potential and impact of AR. In the post-pandemic era, consumer preferences tend towards shopping experiences that not only meet their needs, but are also safe and efficient (Buhalis et al., 2019).

Augmented Marketing, as an innovative solution that integrates AR technology with marketing strategies, has emerged as the answer to creating a more personal, interactive and safe shopping experience. An in-depth analysis of how Augmented Marketing can respond to post-pandemic consumer preferences and overcome security challenges in physical and online shopping environments is the main focus of this research (Villagran-Vizcarra et al., 2023). Case studies covering leading brands that have successfully implemented Augmented Marketing are the main highlight of this research (Blokdyk, 2022). An in-depth analysis of Augmented Marketing strategies and implementation by brands such as IKEA, Sephora, L'Oréal and Ray-Ban provides insight into how AR technology can increase brand visibility in a dynamic post-pandemic environment (Hsu et al., 2021; Song et al., 2019; Wang et al., 2023). By understanding these best practices, we can identify common patterns and successful strategies that other retail industry players can adopt.

The use of AR in the context of Augmented Marketing does not only focus on increasing brand visibility; instead, this technology allows for a greater level of consumer interactivity in virtual shopping environments (Blokdyk, 2022). This research in-depth explores the impact of this level of interactivity on consumer perceptions of brands and products. By utilizing AR technology, consumers can try products virtually, customize product features, and actively participate in the shopping process, creating a more satisfying and personalized experience (T. Suryawijaya & Aqmala, 2023).

The importance of enhanced consumer experience is the main focus in Augmented Marketing. How consumers respond to the use of AR in a shopping context, the impact of this technology on purchasing decisions, and the increase in consumers' feelings of control and convenience are the questions analyzed in depth in this research (Kotler et al., 2017; Lemon & Verhoef, 2016).

In an effort to explore the full potential of Augmented Marketing in optimizing post-pandemic marketing, this research also involves a conceptual analysis of how Augmented Marketing can be widely applied in the retail sector (Dwivedi et al., 2021). By detailing implementation steps, identifying possible challenges, and describing long-term benefits (Wedel et al., 2020), this research provides practical guidance for retail industry players who want to leverage AR technology to improve their consumer experience and marketing effectiveness.

Significant findings from this research include the crucial role of the level of customer interactivity with Augmented Reality

technology in forming positive perceptions of brands and products. In-depth analysis shows that as the level of interactivity increases, consumers tend to have more positive perceptions of products presented through AR (Lemon & Verhoef, 2016; Song et al., 2019). The findings of this research consistently confirm that consumers' active participation in the shopping process through AR makes a significant contribution to satisfaction levels and a more satisfying shopping experience (Gatter et al., 2022; Wang et al., 2023).

Higher levels of satisfaction, as reported by consumers who engage in high interactivity with AR technology, reflect the successful implementation of AR in a retail context (Rauschnabel et al., 2019). Through AR, consumers are not just passive spectators in the shopping experience, but they are actively involved, creating an environment that allows them to explore products in more depth. Research findings show that such interactivity creates closer relationships between consumers and brands, forming a strong foundation for the formation of long-term loyalty (Tan et al., 2022).

It's important to note that customer interactivity includes more than consumers' ability to try products virtually or customize product features to their liking (H. Kumar et al., 2023). Interactivity also includes the emotional involvement that is built during consumer interactions with AR technology (Rauschnabel et al., 2022). The emergence of this emotional attachment, which can be measured through emotional responses, better product understanding, and enhanced feelings of control, becomes a key element in forming positive perceptions and persuading consumers to feel deep satisfaction with the brand (Hackl & Wolfe, 2017; Hidayat, 2022).

These findings are consistent with theoretical frameworks that emphasize the importance of customer interactivity in marketing contexts (Villagran-Vizcarra et al., 2023). This concept has long been recognized as a key element in creating deeper and more meaningful experiences for consumers. The application of this concept within the scope of AR technology adds a new dimension to the notion of interactivity, allowing consumers to experience products in a more direct and personal way. In other words, AR is not only a visual tool, but also a field of exploration and interaction that makes a significant contribution to how consumers respond to brands and products.

The higher levels of satisfaction and emotional engagement gained through customer interactivity with AR technology also have valuable long-term implications. This increased level of satisfaction and emotional attachment creates the basis for the formation of sustainable consumer loyalty (Carmigniani & Furht, 2011; Hsu et al., 2021; Voicu et al., 2023). As a result, brands and retailers can build closer relationships with their consumers (Hidayat, 2022), ensuring that consumers not only make one-time purchases, but also become loyal customers who contribute to long-term business growth (Pantano et al., 2020).

In considering the implications of these findings, we must view customer interactivity with AR as more than just a technological innovation. This is a strategic investment in brand and consumer relationships that can create long-term value. This research provides a deep understanding of how customer interactivity with AR technology is not only changing the way consumers shop, but also how brands and retailers can design more effective and relevant marketing strategies. The implications of these findings can form strategic guidance for retail and marketing industry players in optimizing customer interactivity with AR technology to support business growth and create unforgettable consumer experiences.

In the post-pandemic retail context, this research also explores consumer experiences provided by Augmented Reality. In an era where physical interactions are limited and social distancing is respected, AR provides an innovative solution by creating a new dimension in the shopping experience (Tan et al., 2022). The research results show that AR not only adds a realistic element to the shopping experience, but also provides interactivity that changes consumer paradigms.

Consumers who can test products virtually before making a purchase report peak levels of

satisfaction (T. Suryawijaya & Aqmala, 2023). AR creates an environment where consumers can experience and integrate products directly, reducing uncertainty when shopping online (Tom Dieck et al., 2018). Experiences conditioned by AR give the impression of bringing consumers into the world of the product, reducing risks and increasing their confidence in making the right purchasing decisions.

Amid physical restrictions, where visits to physical stores are limited or less desirable, virtual shopping environments delivered by AR give consumers a greater feeling of control over the purchasing process (Buhalis et al., 2019). They can explore and examine products freely, creating a more personalized experience tailored to their individual preferences (Song et al., 2019; T. W. E. Suryawijaya et al., 2023), creating a much-appreciated feeling of convenience as consumers can customize the shopping experience according to their own convenience and time.

Consumer participation in a virtual shopping environment gives them a sense of power and control that may have been overlooked in the conventional shopping experience (Hilken et al., 2022). With the interactivity offered by AR (Wu et al., 2023), consumers can customize products, try color or model variations, and even feel as if they are in a physical store without having to leave the comfort of their home (Du et al., 2022).

From this perspective, it can be identified that AR not only provides a tool to visualize products, but also creates a shopping experience that meets consumers' psychological and emotional needs (Wu et al., 2023). The feelings of satisfaction and confidence resulting from active participation in the purchasing process through AR create a strong foundation for the formation of customer loyalty. By giving consumers control over their shopping experience, AR is not just a transactional tool (Hilken et al., 2022), but also becomes a bridge to building deeper and more sustainable relationships between brands and consumers.

In conclusion, consumer experiences with AR in a post-pandemic retail context are not just about additional dimensions added to reality (Rejeb et al., 2023), but also about empowering consumers to take a central role in their shopping experience (Poushneh & Vasquez-Parraga, 2017). By delving into these aspects, this research reveals that AR is not only an innovative marketing tool, but also a key driver in creating meaningful and satisfying consumer experiences.

5. CONCLUSION

This research provides an in-depth understanding of the impact of Augmented Reality technology on customer satisfaction in the shopping context. The research findings show that AR has a significant influence on consumer acceptance and purchasing experience, which in turn influences customer satisfaction. Factors such as ease of shopping and comfort in using AR technology also have a crucial role in influencing consumers' decisions to make repeat purchases.

The implication is that retail companies can leverage AR as an effective tool to enhance the shopping experience and drive customer retention. Additionally, digital interactivity during the shopping process and consumers' positive responses to AR features, although with varying degrees of significance, also contribute positively to customer satisfaction. Therefore, a shopping experience enriched by AR technology does not only involve purely technical aspects, but also involves the extent to which consumers can interact with this technology and the extent to which companies can respond to their needs.

Based on the findings of this research, several recommendations can be proposed. First, retail companies need to focus efforts on increasing the ease and convenience of using AR technology, through developing more intuitive interfaces, better user guidance, and improving the visual quality of applications. The easier and more comfortable AR is for consumers to use, the greater their chances of making repeat purchases. Furthermore, the company's response to customer input and needs in the use of AR technology is very important.

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Speed in responding to customer input, resolving problems, and providing necessary support can shape customers' positive perceptions of the company. In addition, customer education regarding the benefits and potential of AR technology in the shopping context needs to be strengthened. The more consumers understand how to leverage this technology to enhance their shopping experience, the more likely they will adopt it.

Further research regarding the use of AR technology in the retail sector is expected to provide a deeper understanding. This research can help retail companies to more optimally design marketing strategies and measure the impact of AR technology on customer satisfaction in more detail. In this increasingly competitive business era, companies can utilize AR technology effectively to increase customer satisfaction, provide competitive advantages, and achieve success in a dynamic business environment. Thus, technology adoption is not just limited to use, but also understanding its impact on customer perception and behavior and its optimal use in marketing strategies to achieve optimal customer satisfaction.

This research may be limited by the limited data available. If the data used has limitations in demographic coverage, such as gender and age aspects, then the generalization of research results may not be generally applicable. In addition, the research findings may not be readily adopted to generalize to the entire population or industry because the study does not include company and retail item data at a sufficient level of specificity. Time constraints may also be a limiting factor, where the relevance of the data or rapidly changing industry trends may reduce the value of the research results.

While this study references several previous studies, limited access to relevant literature or research may influence the variation in references and contribution to the overall quality of the study. Lastly, limited knowledge and experience in preparing research can influence the point of view and interpretation of research results.

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