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Augmented Reality in Fashion Retail: Enhancing Consumer Decision-Making and Engagement

Realidad aumentada en el comercio minorista de moda: mejora de la toma de decisiones y la interacción del consumidor

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ABSTRACT

The present study investigated the impact of Augmented Reality (AR) across consumers in the fashion industry by examining the role of AR strategies in the purchasing routine of consumers in India, investigating the impact of AR technologies on the digital populace, and exploring the factors associated with the purchasing decision. In addition, the effect of AR on consumer engagement is illustrated. A quantitative methodology research approach was applied, and data were collected from 200 consumers using a purposive sampling technique with the aid of a structured questionnaire. The quantitative data were analysed using the SPSS tool version 23 package by performing ANOVA, frequency, and correlation analysis. The outcomes of the study revealed that perceived benefits of AR, likely authenticity, and return rates impact consumer decision-making strategies. Furthermore, discovered the determinants to improve the buyer's decision effectively. The research study implies that the brands should adopt AR strategies to integrate with the values and choices of consumers to nurture a sustainable association. Overall, the study recommends effective implementation of AR technologies to provide enhanced shopping experiences through the amalgamation of physical atmosphere and digital systems.

Keywords: Augmented Reality (AR), Consumer Decision-Making, Fashion Industry, Digital Marketing, Consumer Engagement.
Jel Code: M30, M31

RESUMEN

El presente estudio investigó el impacto de la Realidad Aumentada (RA) en los consumidores de la industria de la moda, examinando el papel de las estrategias de RA en la rutina de compra en India, investigando el impacto de las tecnologías de RA en la población digital y explorando los factores asociados a la decisión de compra. Además, se ilustra el impacto de la RA en la interacción del consumidor. Se aplicó un enfoque de investigación con metodología cuantitativa y se recopilaron datos de 200 consumidores mediante una técnica de muestreo intencional con la ayuda de un cuestionario estructurado. Los datos cuantitativos se analizaron con el paquete SPSS versión 23 mediante análisis de ANOVA, frecuencia y correlación. Los resultados del estudio revelaron que los beneficios percibidos de la RA, la probable autenticidad y las tasas de retorno, influyen en las estrategias de toma de decisiones del consumidor. Además, se identificaron los determinantes para influir eficazmente en la decisión del comprador. El estudio de investigación sugiere que las marcas deberían adoptar estrategias de RA para integrarse con los valores y preferencias de los consumidores y fomentar una conexión sostenible. En general, el estudio recomienda la implementación efectiva de tecnologías de RA para brindar experiencias de compra mejoradas mediante la integración del entorno físico y el sistema digital.

Palabras clave: Realidad aumentada (RA), toma de decisiones del consumidor, industria de la moda, marketing digital, participación del consumidor.

Código JEL: M30, M31

INTRODUCTION

The fashion industry has been at the forefront of innovation, continuously evolving to meet the changing requirements and preferences of consumers (Carvalho & Abreu, 2023; Nair & Kumar, 2025). The rapid evolution of technology, specifically in the digital world, has led to the rise of AR as a crucial development. It enhances the buying experience by integrating the digital system into the physical world (Irfan Rais, 2025). It creates immersive and interactive environments. In the fashion industry, consumer behaviour has undergone a substantial transformation. Conventionally, consumers physically interacted with products before purchase, and shopping was one of the tactile experiences (Atique, 2024). The evolution of e-commerce and digital technology has changed this paradigm. Online shopping has delivered convenience to consumers, but it has also presented challenges associated with the visualisation and fitting of products (Mekonnen, 2024; Naeem, 2025).

The digital transformation, brought about by the introduction of social media platforms and smartphones, has led to varied consumer behaviour and engagement in the fashion industry (Sagar, 2024; Wu, 2024). According to a statistical report from Statista, e-commerce sales are expected to reach nearly $6.3 trillion by 2024. It highlights the significance of online retailing.

The consumer’s usage of online platforms has increased due to their shopping requirements and a desire for experiences that replicate the sensory experience of in-store shopping. Consumers, specifically Gen Z and Millennials, demand more from products (Trivedi, 2023). The generation is craving authenticity, interactivity and personalisation. A report by Accenture shows that almost 91 per cent of consumers are likely to shop in brands that provide personalised offers and recommendations (Rainsberger, 2023).

AR is termed a technology that superimposes sounds, images, and data generated by the computer. It adopts the data into the real world with the support of devices, such as AR glasses and smartphones. In the fashion sector, AR enables consumers to visualise how accessories and clothing will look even before trying them on (Nandhakumar et al., 2025). Interactive advertisements, virtual fitting rooms, and mobile applications facilitate the implementation of AR technology (Idrees et al., 2023).

The most notable beneficiary of AR in the fashion industry is virtual experience. Brands such as Warby Parker have established technology through eyewear, allowing consumers to virtually try on products and see how they match their colour tones (Taherdoost, 2023). These applications enhance consumer engagement and mitigate the risk of uncertainty associated with online purchases.

Therefore, AR play a dominant role in the marketing strategies in the fashion industry. Brands are adopting AR for interactive marketing in the fashion sector. It captures the consumer engagement and attention. Gucci has implemented AR features in its application, enabling users to see how different types of shoes look on their feet before making a purchase. The campaigns enhance brand visibility and foster a deeper emotional connection with customers (Jiang & Lyu, 2024).

Figure 1
AR in the marketing strategies

Source: Own elaboration (Periyasamy & Perisayami, 2023).

The integration of AR has a substantial influence on consumer decision-making strategies (Figure 1). Through the visualisation of AR in the interactive platform, AR enhances consumer confidence in their purchasing decision (Barta et al., 2023a). When consumers see how they look in the apparel, they will be delighted. Also, a higher return rate is a persistent challenge for retailers in the fashion sector. AR technology addresses the issues associated with mismatch and fitting. It permits the consumer to make a decision based on visualisation (Fani et al., 2023).

AR can reduce the return rate by up to 30%, resulting in higher profitability and consumer satisfaction (Kumar et al., 2024). Also, it provides data insights into consumer choices and behaviour. Through the evaluation of AR features, the brand might gain insight into the most frequently used items and styles. This approach enables brand firms to adjust their strategy for meeting consumer demands and management optimisation (Xue et al., 2023).

Hence, AR disseminate a transformative force in the fashion sector and improves the decision-making strategies. Also, it addresses the contemporary challenges of likely return rates and sustainable beneficiaries (Joldescu-Stan, 2023). As consumer expectations evolve towards immersive and personalised experiences, AR serves as a crucial technology for the fashion sector, which seeks to attract new customers in the global market (Alayli, 2023). Therefore, the present research aims to detect how AR technology constructs consumer behaviour in the fashion industry. Additionally, it offers insights into the implications for

brand sustainability in a dynamic market. An in-depth analysis of AR enables retailers to adopt sustainable practices with ethical consideration.

The importance of this research lies in identifying AR as a crucial tool for transforming the fashion industry. It elevates the consumer engagement and decision-making. It permits virtual try-ons and addresses the complications associated with digital shopping, including style and fit. The technology elevates confidence amongst consumers and minimises return rates. It drives sales and elevates consumer satisfaction.

Furthermore, AR provides a deeper connection between brands and consumers. It promotes brand trust and loyalty. These two chief determinants are significant for the competing marketplace. Additionally, the research study emphasises the importance of AR in promoting sustainable strategies within the fashion sector. It eradicates the requirement for physical samples and minimises waste related to returns.

AR aids in implementing eco-friendly strategies that integrate with the consumer demand for achieving sustainability. The outcome of the study supports the brand in leveraging AR technologies for decision-making and inventory management optimisation. Finally, the AR implications enable fashion retailers to traverse the digital landscape effectively. It fosters a high level of consumer engagement and enhances the overall purchasing experience.

The adoption of AR in the fashion sector represents substantial challenges that hinder efforts to improve consumer engagement and decision-making strategies. The primary issue faced by the fashion sector is that technology adoption requires high investment (Dogra et al., 2023). It necessitates substantial investment in the software and hardware. It isn't very easy for small-sized brands in the fashion industry. The requirement of specialised skills for generating realistic AR content complicates the challenges. Since the fashion sector lacks technical experts for maintaining the technologies effectively. The financial barrier restricts the AR implementation, particularly for growing fashion brands that have benefited significantly from consumer engagement tools (Enyejo et al., 2024).

Additionally, consumer readiness and acceptance are key factors. Most consumers are unfamiliar with these technologies, despite their several benefits, including virtual experiences. Additionally, concerns about data privacy, usability, and security deter users from engaging with AR technologies. Trust is a predominant challenge that affects consumer acceptance of the technologies. It ultimately hinders the AR efficacy in the performance and profitability of the fashion sector. Hence, the present research contributes to exploring the value of AR in the fashion sector and its impact on consumer engagement and the sustainability of firms in the competitive global market.

Research objective

The chief aim of the present study is to achieve the following objectives:

To provide an overview of the significance of Augmented Reality (AR) in the fashion industry
To evaluate the impact of AR on the decision-making strategies of consumers in the fashion industry
To assess the consumer perceptions regarding AR and the perceived benefits
To analyse the associations of AR technologies and marketing tools for estimating consumer engagement.
To recommend the effective implementation of AR for enhanced shopping experience and increased consumer engagement.

Research Hypothesis

The hypothesis of the present study is as follows.
H1: AR technologies are prevalent in the fashion industry
$H1_0$: AR technologies are not prevalent in the fashion industry
H2: Perceived benefits of AR have positive impacts on the purchasing decision of consumers
$H2_0$: Perceived benefits of AR have negative effects on the purchasing decision of consumers
H3: There is a significant association between AR technologies and marketing tools for estimating consumer engagement.
$H3_0$: There is no significant association of AR technologies and marketing tools for estimating consumer engagement.

Paper Organization

The present paper is based on the current drift in the depiction of AR utilisation in the fashion industry. Whereas, scrutiny of contemporary research that has remarked on similar research work through varied use of analytical methods is characterised in Section 2. Additionally, Section 3 illustrates the methodology used in the present research. Further, the results of the current study are indicated in Section 4. Consequently, Section 5 represented the conceptual discussion on the perception of current research. Section 6 shows the limitations of the paper. Orderly, concluded reflection from the present paper is demonstrated in Section 7.

LITERATURE REVIEW

AR and Consumer decision-making behaviour

AR integration in the fashion sector has been a noteworthy focus of research, with studies uniformly emphasising its revolutionary capacities in customer interaction and decision-making. The existing research (Qin et al., 2021) analyses the significance of the MAR app and its impact on shopping behaviour and consumer attitudes. The study empirically examines the user experience and its effect on consumers' perceptions of ease of use, informativeness, and overall satisfaction.

The outcome implies that informativeness and gratification are substantially associated with app utilisation. The MAR app is observed to be enjoyable and contributes to the acquisition of information, resulting in positive implications. The research study benefits both MAR app designers and consumers, thereby impacting the marketing strategy of firms. Likewise, the conventional research (Quattelbaum et al., 2022) investigates the impact of AR and VR on the decision-making process in the textile sector.

The primary objective of the research is to assess the benefits and limitations of AR and VR utilisation in the process. AR and VR act as an interactive system, delivering valuable support for purchasing intentions. The visual properties simulation, offered prices, and consumer acceptance are some of the barriers that impact the successful adoption of these technologies (Jaganathan et al., 2025).

Such challenges are not exclusive to the fashion market; comparable issues have been documented across other sectors where AR is being implemented, including the automobile and home decor industries, indicating that overcoming technological and perceptual constraints is a universal challenge for AR adoption.

The technological growth has led to the adoption of marketing strategies, and the retail business has begun to launch AR applications. It is a new process that generates interactive channels that influence consumer purchasing decisions—additionally, a firm desires to provide an unforgettable experience to the consumers. The research study examines the impact of AR on consumer loyalty and purchasing intention. The significance of AR applications has been gradually increasing, and the effect of AR on behaviour and attitudes is gaining recognition.

The conventional research (Eru et al., 2022) assesses the influence of AR using quantitative research methods. Moreover, the data were gathered from 319 respondents and evaluated using SEM (Structural Equation Model). The outcome implies that AR positively impacts consumer loyalty through the innovative dimension (Sarkis et al., 2025). When one combines these results with other research, a clear trend emerges: AR not only enhances the short-term shopping experience but also fosters long-term loyalty by creating engaging and memorable brand experiences. The impact may vary depending on the nature of the retail setting and the consumer demographic profile.

Cultural dimension

Similarly, conventional research (Hilal & Saud, 2023) examines the impact of AR on consumers' purchasing intentions in Saudi Arabia. It utilises analytical descriptive methods, and data were gathered from 812 consumers. Positive correlations were observed among AR

factors, likely embodiment, background, and hermeneutic, as well as the dimensions of creativity, fun, and quality, in relation to purchasing intention. Young women aged 17 to 26 years utilise AR for purchasing accessories and clothes.

The outcome indicates that AR has a substantial impact on the buying decision and recommends the potential usage in strategic marketing. Additionally, it suggests that social status, gender, monthly income, and education have a significant impact on consumer perception of AR. Married women have favourable views, and clothing and accessories are frequently purchased in the retail sector. There were no substantial differences in age and family members. There is a significant impact on AR experience and purchasing decisions despite anxiety about using applications.

The research study recommends that the retail store in Saudi Arabia adopt AR technologies to meet consumer demands and trends. To elevate the AR beneficiaries among the brands, the firm should adopt effective technologies that align their designs with the cultural traits of consumers in Saudi Arabia. This serves to emphasise the need for cultural adaptation in AR adoption; evidence from Saudi Arabia indicates that AR strategies need to be adjusted for the social and cultural environment in which the target market is located to maximise effectiveness, a lesson with implications for global AR implementation initiatives.

AR is enhancing consumer experiences and influencing their shopping decisions. The cognitive load theory and the SRO (Stimulus-Organism Response) model were incorporated to examine the impact of AR on mental load. The research study (Barta et al., 2023b) evaluates the effects of option similarity, cognitive dissonance, and overchoice confusion on willingness to pay and purchasing intention. Since the study is based on the AR experiences in the cosmetics store for product assortment. A mixed-methods approach is employed, providing accurate outcomes.

The results show that AR minimises cognitive dissonance, with mediating effects of confusion and similarity due to overchoice. Additionally, minimising cognitive load promotes purchase intention, leading to a greater willingness to pay. AR applications in e-commerce platforms have benefited from acquiring a wide assortment of the same products. It supports online retailers in improving their firm performance through increased sales volume. The decrease in cognitive load not only simplifies decision-making but also leads to increased customer satisfaction and loyalty, thereby affirming the value of AR as a tool for customer engagement and retention.

Implications of AR

Consumer behaviour and its prevalence significantly impact business performance. The prevailing research (Hsu et al., 2024) assesses the impact of AR on impulsive purchasing

decisions. The research study focuses on vividness, authenticity, and interactivity. These factors, combined with emotional and psychological responses, create a more enjoyable shopping experience.

Data analysis was carried out using the PLS method, involving 254 respondents in the survey. The results show that AR characteristics encourage consumer behaviour and foster purchasing intention. Furthermore, instant gratification is promoted through interactivity and product presence. Gratification is achieved through vividness and the stimulation of the most prominent products, which is enabled by authenticity. The findings offer valuable insights for AR developers to refine the AR, aligning user experiences and increasing consumers' buying intentions (Nadeem et al., 2025).

This prevailing research directly relates to the Objectives by discussing how AR shapes consumer choice-making and perceptions within fashion retailing. The review of the literature thereby lays the groundwork for the following empirical analysis, ensuring alignment with the core research objective.

Research gap

1) The existing research (Qin et al., 2021) examines respondents enrolled in the same university and lacks generalizability in its outcomes.
2) Future studies require analysing the different age groups, personality traits, and cultural aspects to identify the benefits of AR in industrial sectors (Eru et al., 2022).
3) The prevailing research utilises the snowball sampling technique for sample selection, which may not yield the most accurate data.

Hence, the present research adopts a quantitative research method for analysing the characteristics of AR tools in assessing consumer engagement.

METHODOLOGY

Research Design

The research design is supposed to implement several processes, including tools and procedures, to obtain data for the research purpose. Well-designed research is mandatory to acquire reliable and valid outcomes. The study employs the appropriate methodological approach, addressing the research questions (Baur, 2019).

The research methodology and design have been formulated to systematically address each of the research objectives presented in the introduction. All phases of data collection and analysis are aligned with these objectives, ensuring the study maintains its focus on the key objective. The current study employs a quantitative research method. For the quantitative

method, data are collected using a questionnaire that is based on study variables and queries to facilitate the analysis (Mohajan, 2020).

Study Area

The study is conducted among consumers in the fashion industry in India, who are wholeheartedly involved in the survey and interviews. It supports the proper execution of the present study. The survey and interview are conducted with the aid of respondents. The people who contributed to the study are consumers of the fashion sector. This will enhance the significance of the research and make data collection more convenient and faster.

Sample Size and Population

For any study, the sample size is supposed to be finalised after appropriate analysis to acquire precise as well as generalised outcomes. In the present research, the most suitable respondent contribution will be selected to collect data on the perceptions of consumers in India. The data gathered using the quantitative technique depends on the chosen sample size, which helps to prove the study objectives (Lakens, 2022). The study incorporated 200 respondents for the quantitative research, which included consumers in the respective field involved in the current study.

Sampling Techniques

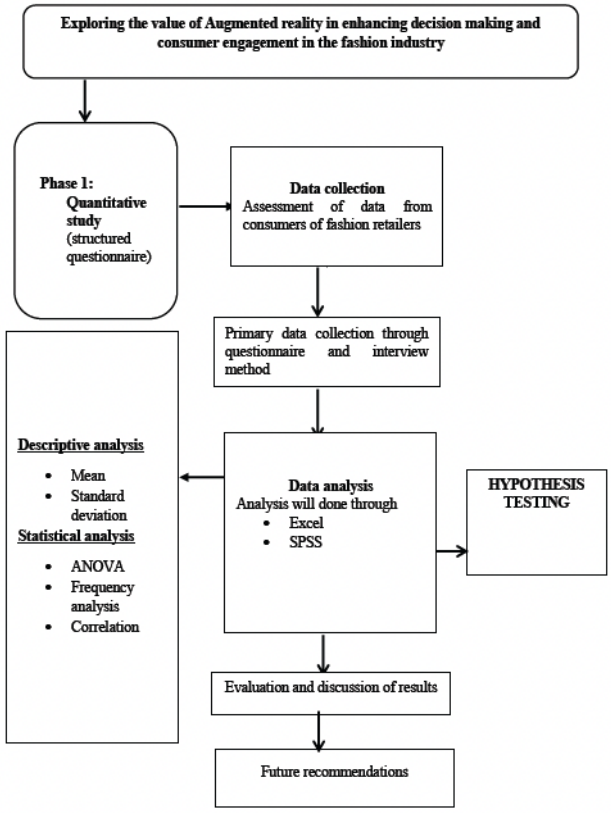
The technique used for sampling is a crucial step in collecting data from the targeted population, rather than concentrating on the entire available population (Stratton, 2021). The current study uses a purposive sampling method to select the target respondents. Correspondingly, the data to be gathered for the current research will be collected from samples that are willing and able to offer precise responses, which will be measured. Applicable sampling techniques will help derive samples to reinforce the objective of the present research. Additionally, it is used to analyse the dataset and categorise patterns, allowing one to comprehend the significance of AR technologies in the fashion sector (Sreekumar, 2023).

Data Analysis

Quantitative methodology involves collecting, analysing, and interpreting quantitative data in research. The study levels are synergistic with the quantitative phase. This method yields results that include the incidence under study, thanks to the quantitative data. The present study employed a quantitative research approach, as it is more appropriate for depicting and enlightening different aspects (McLeod, 2019). The quantitative data collected through a structured questionnaire are analysed using the SPSS software tool. The gathered data are exported into an MS Excel sheet for a transparent study of variables.

The quantitative research approach gathers data from respondents using closed-ended queries and infers the responses (Kandel, 2020). This is a naturalistic and multi-method approach, which is an interpretive technique to its research matter (Maxwell, 2021). An in-depth interview procedure technique is implemented to question consumers in the fashion sector. This technique describes the respondent's opinion, experience, emotions, and meaning descriptively.

Figure 2
Research Design



Source: Own elaboration.

Figure 2 above demonstrates the process incorporated in the present study for quantitative data analysis using SPSS software, where study variables are identified and executed.

RESULTS

Demographic analysis

Two hundred consumers are considered participants of the present research. The demographic particulars of the contributors are illustrated in Table 1.

Table 1
Demographic data

Demographic factor	Parameter	No. of respondents	Frequency (%)
Age	18 to 25 years	16	8
	26 to 35 years	133	66
	36 to 60 years	51	26
Gender	Male	134	67
	Female	66	33
Marital status	Single	183	91
	Married	17	9
Qualification	Under graduate	133	67
	Post graduate	51	25
	PhD/Doctorate	16	8
Occupation	Student	45	23
	Private	110	55
	Public	25	12
	Self	20	10

Source: Own elaboration.

Table 1 presents the demographic data of Gen Z individuals who have joined the review. The age of the respondents is analysed, and it is concluded that the majority of the defendants (66%) belong to the 26 to 35-year group. In the case of gender, male respondents (67%) contributed more to the research purposes. Based on educational qualifications, the majority of the respondents have completed undergraduate studies (67%). According to the survey, most respondents (55%) are employed in the private sector, followed by students and those in the public sector. Most of the respondents have worked for 0-5 years in the firms. The outcome of the demographic data indicates that the current study has collected data from undergraduate students aged 26 to 35 years, with 0-5 years of experience, which has contributed substantially to the research purposes.

Statistical analysis

Hypothesis 1

Frequency analysis

It is an arithmetic method used to analyse data. It evaluates the occurrence of different values in the sample. It supports ensuring the accuracy and consistency of the dataset. The frequency is depicted as F, and the cumulative percentage is addressed as C%. V represents Valid.

Table 2
AR application for shopping

		F	%	V%	C%
Valid	yes	162	81.0	81.0	81.0
	no	38	19.0	19.0	100.0
	Total	200	100.0	100.0	

Source: Own elaboration.

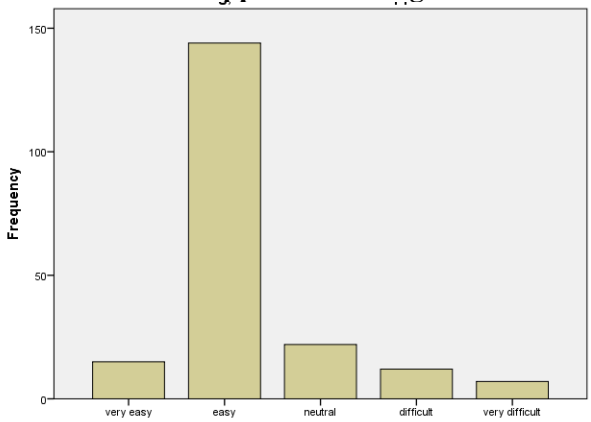
Table 2 exemplifies the frequency analysis of AR applications prevalent in the fashion industry. Almost 81% of consumers utilised AR applications, and 19% of them do not utilise AR applications

Table 3
Scaling easy-to-use AR applications

		F	%	V%	C%
V	very easy	15	7.5	7.5	7.5
	easy	144	72.0	72.0	79.5
	neutral	22	11.0	11.0	90.5
	difficult	12	6.0	6.0	96.5
	very difficult	7	3.5	3.5	100.0
	Total	200	100.0	100.0	

Source: Own elaboration.

Graph 1
AR applications usage



Source: Own elaboration.

Table 3 and Graph 1 exemplify the frequency analysis of scaling the usage of AR applications. Almost 72% of consumers in the fashion sector found it easy to utilise AR applications. 7.5% of them found the application very easy to use. On the contrary, 6% of them found it difficult, and 3.5% of them found it very difficult to use the AR application to evaluate the fit and style of the products in the fashion sector. The findings address Objective 1, which is the prevalence of AR technologies in the fashion industry.

Hence, H1: AR technologies are prevalent in the fashion industry has been proved from the above analysis.

Hypothesis 2

One-way ANOVA

It is used to determine the impact of social media and research objectives on dependent variables, as well as to investigate variations. The current study employed one-way ANOVA to assess the impact of online learning platforms on employee training.

Table 4
Descriptives

		N	M	SD	SE	95% CI for M		Min	Max
						LB	UB		
How does AR impacts the emotional connections to a brand?	yes	162	1.78	.417	.033	1.71	1.84	1	2
	no	38	3.63	.633	.103	3.42	3.84	3	5
	Total	200	2.13	.864	.061	2.01	2.25	1	5
What is the overall satisfaction level with the current use of AR in the fashion industry?	yes	162	1.58	.495	.039	1.50	1.66	1	2
	no	38	3.29	1.063	.172	2.94	3.64	2	5
	Total	200	1.91	.928	.066	1.78	2.03	1	5

Source: Own elaboration.

Table 5
ANOVA

		SOS	df	M^2	F	S.
How does AR impacts the emotional connections to a brand?	Between-Groups	105.778	1	105.778	488.865	.000
	Within-Groups	42.842	198	.216		
	T	148.620	199			
What is the overall satisfaction level with the current use of AR in the fashion industry?	Between-Groups	89.922	1	89.922	219.073	.000
	Within-Groups	81.273	198	.410		
	T	171.195	199			

Source: Own elaboration.

Table 5 above illustrates the ANOVA test results, which involved AR technologies and the purchasing decisions of consumers in the fashion industry. The descriptive statistics indicate that most consumers report an increase in their emotional and satisfaction levels with the adoption of AR technologies (Table 4). In the ANOVA test, the AR technologies acquire a p-value of 0.000 regarding consumer purchasing decisions in the fashion sector. All the p-values are less than 0.05, which indicates that AR technologies and consumer purchasing decisions in the fashion sector are statistically significant (Table 5). Thus, AR technologies have a significant impact on buying decisions. Therefore, the null hypothesis is invalid. The findings address objectives 2 and 3, evaluating the impacts of AR technologies on purchasing decisions and their perceived benefits for consumers in the fashion industry.

Hence, H2: Perceived benefits of AR have positive impacts on the purchasing decision of consumers has been proved from the above analysis.

Hypothesis 3

Correlation

Table 6 presents the consequences of a correlation test conducted to examine the association between AR technologies and consumer engagement. The p-value is .000, which is well

below the conventional significance level of 0.05. This specifies that the correlation observed between AR technologies and consumer engagement is statistically significant (Table 6). The very low p-value confirms that the relationship is unlikely to be due to random chance.

Table 6
Correlations

Control Variables			How engaging do you find AR experiences in the marketing campaign?	How likely are you to share the AR experience on social media?
Does AR enhances brand loyalty?	How engaging do you find AR experiences in the marketing campaign?	Cr	1.000	.608
		S	.	.000
		df	0	197
	How likely are you to share the AR experience on social media?	Cr	.608	1.000
		S	.000	.
		df	197	0

Source: Own elaboration.

A correlation value of 1 indicates a perfect positive correlation between AR technologies and engagement, as well as their purchasing intention. This means that as one variable increases, the other variable increases proportionally. In this context, it suggests that the presence of AR technologies is strongly associated with a higher likelihood of consumer engagement. The outcomes of the correlation test reveal a statistically significant and perfect positive correlation between the AR technologies and consumer engagement. This indicates a strong relationship between these variables. The findings address objective 4, evaluating the association of AR technologies and marketing tools for consumer engagement in the fashion industry.

DISCUSSIONS

The outcome of the present research proves that the AR strategies are more prevalent in the fashion industry. The present study suggests a notable correlation between the perceived benefits of AR and consumer purchasing decisions. Additionally, the substantial association of AR technologies and marketing tools for estimating consumer engagement has been illustrated. Overall, the study's findings achieve the research objectives.

The existing research (Jiang et al., 2023) reports the efficacy of AR in the tourism industry and evaluates the consumer experiences through quantitative interviews. Meta-analyses have been conducted among 118 respondents. The outcome implies that the AR have a noteworthy impact on the efficacy of tourism and elevates the travelling experience. Likewise, the present research conducted frequency analysis and 72% of consumers in the fashion sector found it

easy to utilise AR applications. It indicates that consumers are aware of using AR for purchasing products.

Contemporary research (Erdmann et al., 2023) evaluates consumers' purchasing intentions to adopt AR. Data were gathered from 253 participants, and a cost-benefit process was conducted. The outcome suggests that experiential AR has a positive impact on consumers' purchasing intentions on online platforms. Similarly, the present study examines the impact of perceived benefits on purchasing intention. In the ANOVA test, the p-values are less than 0.05, indicating a substantial correlation between the perceived benefits and purchasing intention.

The prevailing research (Dağ et al., 2024) examines the impact of AR on user satisfaction, authenticity, and engagement in the tourism sector. Data has been analysed through PLS. The outcome reveals that authenticity, engagement and experiences attain a P value less than 0.001, proving these factors have a positive impact due to AR utilisation. Similarly, the present research employs a correlation test, and the results reveal a significant and perfect positive correlation with a p-value of 0.000 between AR technologies and marketing tools for estimating consumer engagement.

The chief constraint of the study is the limited sample population. Henceforth, the outcomes lack generalizability due to the small sample size. Henceforth, the outcomes may not be comprehensively pertinent and must be contextualised within the fashion industry. Moreover, the primary data has been used to derive the result. Human actions are an ever-fluctuating module that cannot remain constant. Consequently, the study's findings always vary depending on the consideration of differences in consumer perception within the fashion sector. However, the endorsement provided by the research can be valuable in raising awareness of the significance of AR technologies for achieving successful outcomes.

CONCLUSIONS

The integration of AR in the fashion sector holds transformative potential for enhancing consumer engagement. Since it permits the virtual try-on and interactive fashion, AR addresses the challenges of digital shopping. It eliminates the uncertainty regarding style and fit. It fosters emotional connection between brands and consumers. The study succeeded in achieving the objective through (1) measuring the role of AR in fashion; (2) comparing its influence on decision-making; (3) exploring consumer attitudes; (4) comparing the marketing and engagement role of AR; and (5) providing effective implementation strategies.

The practical implication of the study recommends that retailers adopt AR technologies to generate personalised experiences that align with modern consumers. Brands implementing AR might expect decreased return rates, higher consumer satisfaction, increased brand trust, and higher sales. It drives sustainability efforts in the fashion sector through the minimisation of wastage related to physical samples. In the digital era, consumers are increasingly aware of the environmental impact, and brands must adopt AR strategies to gain a competitive edge in the global market. Concluding, embracing AR is not a digital trend; brands must thrive in the digital landscape and meet the desire of environmentally conscious consumers. Artificial intelligence plays a vital role in the modern era. Hence, future research may explore the integration of AI and AR to enhance the purchasing experiences of consumers.

REFERENCES

Alayli, S. (2023). Factors Influencing the Establishment of Clothing Retailers in the Metaverse: The Role of Metaverse Technology as a Mediator. *Dutch Journal of Finance and Management, 5*(1), 22281. https://doi.org/10.55267/djfm/13580

Atique, S. (2024). Consumer Attitudes Towards Augmented Reality in Fashion Retail: A Market Study. *Journal of Socio-Educational Dynamics-JSED, 2*(1), 44-59. https://doi.org/10.1109/ICAIT61638.2024.10690357

Barta, S., Gurrea, R., & Flavián, C. (2023a). How augmented reality increases engagement through its impact on risk and the decision process. *Cyberpsychology, Behavior, and Social Networking, 26*(3), 177-187. https://doi.org/10.1089/cyber.2022.0087

Barta, S., Gurrea, R., & Flavián, C. (2023b). Using augmented reality to reduce cognitive dissonance and increase purchase intention. *Computers in Human Behavior, 140,* 107564. https://doi.org/10.1016/j.chb.2022.107564

Baur, N. (2019, June). Linearity vs. circularity? On some common misconceptions on the differences in the research process in qualitative and quantitative research. *Frontiers in Education*, 4, 53.

Carvalho, C., & Abreu, M. (2023). A Perspective on the future of the fashion and textile sector in Portugal with the use of AI, AR and VR technological tools. *International Fashion and Design Congress.*

Dağ, K., Çavuşoğlu, S., & Durmaz, Y. (2024). The effect of immersive experience, user engagement and perceived authenticity on place satisfaction in the context of augmented reality. *Library Hi Tech*, 42(4), 1331-1346. https://doi.org/10.1108/LHT-10-2022-0498

Dogra, P., Kaushik, A. K., Kalia, P., & Kaushal, A. (2023). Influence of augmented reality

on shopping behavior. *Management Decision*, 61(7), 2073-2098. https://doi.org/10.1108/MD-02-2022-0136

Enyejo, J., Obani, O., Afolabi, O., Igba, E., & Ibokette, A. I. (2024). Effect of Augmented Reality (AR) and Virtual Reality (VR) experiences on customer engagement and purchase behavior in retail stores. *Magna Scientia Advanced Research and Reviews, 11*(2), 132-150. https://doi.org/10.30574/msarr.2024.11.2.0116

Erdmann, A., Mas, J., & Arilla, R. (2023). Value-based adoption of augmented reality: A study on the influence on online purchase intention in retail. *Journal of Consumer Behaviour, 22*(4), 912-932. https://doi.org/10.1002/cb.1993

Eru, O., Topuz, Y. V., & Cop, R. (2022). The effect of augmented reality experience on loyalty and purchasing intent: an application on the retail sector. *Sosyoekonomi, 30*(52), 129-155. https://doi.org/10.17233/sosyoekonomi.2022.02.08

Fani, V., Antomarioni, S., Bandinelli, R., & Ciarapica, F. E. (2023). Data mining and augmented reality: an application to the fashion industry. *Applied Sciences, 13*(4), 2317. https://doi.org/10.3390/app13042317

Hilal, A., & Saud, N. (2023). The impact of the use of augmented reality on online purchasing behavior sustainability: The Saudi consumer as a model. *Sustainability, 15*(6), 5448. https://doi.org/10.3390/su15065448

Hsu, W.-C., Lee, M.-H., & Zheng, K.-W. (2024). From virtual to reality: The power of augmented reality in triggering impulsive purchases. *Journal of Retailing and Consumer Services, 76*, 103604. https://doi.org/10.1016/j.jretconser.2023.103604

Idrees, S., Vignali, G., & Gill, S. (2023). Interactive marketing with virtual commerce tools: purchasing right size and fitted garment in fashion metaverse. *The Palgrave Handbook of interactive marketing* (pp. 329-351): Springer. https://doi.org/10.1007/978-3-031-14961-0_15

Irfan Rais, M. (2025). Empirical Study of Social Media Marketing's Impact on Brand Image and Loyalty in Retail, Muscat. *Mercados y Negocios*, (54), 33–56. https://doi.org/10.32870/myn.vi54.7770

Jaganathan, M., Perumal, S., Shaari, H., Sulaiman, Y., & Mat, N. K. N. (2025). Consumer attitude as a mediator in the adoption of smart retail technologies in emerging market. *Multidisciplinary Reviews, 8*(4), 2025101-2025101. https://10.31893/multirev.2025101

Jiang, X., Deng, N., & Zheng, S. (2023). Understanding the core technological features of virtual and augmented reality in tourism: A qualitative and quantitative review. *Current Issues in Tourism, 26*(21), 3444-3464. https://doi.org/10.1080/13683500.2023.2214847

Jiang, Z., & Lyu, J. (2024). The role of augmented reality app attributes and customer-based brand equity on consumer behavioral responses: an SOR framework perspective. *Journal of Product & Brand Management*, 33(6), 702-716. https://doi.org/10.1108/JPBM-09-2023-4706

Joldescu-Stan, G. (2023). Economic Perspectives and The Role of Technology in Cultural Heritage Protection and Sustainable Development. *Online Journal Modelling the New Europe,* (43), 18-31.

Kandel, B. (2020). Qualitative Versus Quantitative Research. *Journal of Product Innovation Management, 32*(5), 658.

Kumar, H., Rauschnabel, P. A., Agarwal, M. N., Singh, R. K., & Srivastava, R. (2024). Towards a theoretical framework for augmented reality marketing: A means-end chain perspective on retailing. *Information & Management*, *61*(2), 103910. https://doi.org/10.1016/j.im.2023.103910

Lakens, D. (2022). Sample size justification. *Collabra: psychology, 8*(1), 33267. https://doi.org/10.1525/collabra.33267

Maxwell, J. A. (2021). Why Qualitative Methods are Necessary for Generalization. *Qualitative Psychology*, *8*(1), 111. https://doi.org/10.1037/qup0000173

McLeod, S. (2019). Qualitative vs Quantitative Research Methods & Data Analysis. *Simply Psychology*. Link: https://www.simplypsychology.org/qualitative-quantitative.html

Mekonnen, A. (2024). Augmented reality (AR) in retailing: customers' experience in luxury fashion. In *Digital Transformation for Fashion and Luxury Brands: Theory and Practice* 91-106, Springer. https://doi.org/10.1007/978-3-031-35589-9_5

Mohajan, H. K. (2020). Quantitative research: A successful investigation in natural and social sciences. *Journal of Economic Development, Environment and People, 9*(4), 50-79.

Nadeem, W., Alimamy, S., Ashraf, A. R., & Wang, K. (2025). Understanding consumers' value co-creation and value co-destruction with augmented reality service marketing. *Journal of Services Marketing.* https://doi.org/10.1108/JSM-07-2024-0332

Naeem, M. (2025). Emerging trends in global E-retailing: exploring the dark side of scan and go in-store technologies in consumer shopping journeys. *International Marketing Review,* 42(2-3). https://doi.org/10.1108/IMR-06-2023-0110

Nair, P., & Kumar, S. (2025). Crafting Couture: AI's Role in Personalizing Unique Consumer Experiences Through Co-Creation. In *Leveraging AI for Effective Digital Relationship Marketing* (199-222), IGI Global. https://doi.org/10.4018/979-8-3693-5340-0.ch007

Nandhakumar, C., Gayathri, P., Kaviya, B., Kaviya, S., & Kirupa, L. (2025). Interactive Virtual Fitting Room: Real-Time E Commerce Accessories Try-on with Image Descriptors using Deep Learning. In *The 2025 6th International Conference on Mobile Computing and Sustainable Informatics (ICMCSI).*

Periyasamy, A. P., & Periyasami, S. (2023). Rise of digital fashion and metaverse: influence on sustainability. *Digital Economy and Sustainable Development*, 1(1), 16. https://doi.org/10.1007/s44265-023-00016-z

Qin, H., Peak, D. A., & Prybutok, V. (2021). A virtual market in your pocket: How does mobile augmented reality (MAR) influence consumer decision making? Journal *of Retailing and Consumer Services, 58*, 102337. https://doi.org/10.1016/j.jretconser.2020.102337

Quattelbaum, B., Breckenfelder, C., Voigt, J., & Maas, L. (2022). Possibilities and limits of virtual and augmented reality in the purchase decision process for clothing. *Communications in Development and Assembling of Textile Products, 3*(1), 42-50. https://doi.org/10.25367/cdatp.2022.3.p42-50

Rainsberger, L. (2023). The modern customer—The PHANTOM. In *The Modern Customer–the PHANTOM,* (5-74). Springer. https://doi.org/10.1007/978-3-658-39196-6_3

Sagar, S. (2024). The Impact Of Digital Transformation On Retail Management And Consumer Behavior. *Journal of Business and Management, 26*(1), 06-14.

Sarkis, N., Jabbour Al Maalouf, N., Saliba, E., & Azizi, J. (2025). The impact of augmented reality within the fashion industry on purchase decisions, customer engagement, and brand loyalty. *International Journal of Fashion Design, Technology and Education*, 1-10. https://doi.org/10.1080/17543266.2025.2470187

Sreekumar, D. (2023). What is research methodology? Definition, types, and examples. *Paperpal Blog-Academic Writing Guides*.

Stratton, S. J. (2021). Population research: convenience sampling strategies. *Prehospital and disaster Medicine, 36*(4), 373-374. https://doi.org/10.1017/S1049023X21000649

Taherdoost, H. (2021). Data collection methods and tools for research; a step-by-step guide to choose data collection technique for academic and business research projects. *International Journal of Academic Research in Management* (IJARM), 10(1), 10-38.

Taherdoost, H. (2023). E-Business Models and Strategies E-Business. In *Essentials: Building a Successful Online Enterprise* (25-50), Springer. https://doi.org/10.1007/978-3-031-39626-7_2

Trivedi, T. (2023). Generation Z Inclined Toward Immersive Shopping Experiences: AR Virtual Try-On in Online Retail in India Immersive. In *Technology and Experiences: Implications for Business and Society* (159-170), Springer. https://doi.org/10.1007/978-981-99-8834-1_9

Wu, C. (2024). The Virtual Reality and Augmented Reality Adoption Impact on Customer Loyalty for the Fashion Brands. *Pre-prints.org.* https://doi.org/10.20944/preprints202307.1408.v3

Xue, L., Parker, C. J., & Hart, C. A. (2023). How augmented reality can enhance fashion retail: a UX design perspective. *International Journal of Retail & Distribution Management, 51*(1), 59-80. https://doi.org/10.1108/IJRDM-09-2021-0435