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Potential impact of

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1.0 Abstract

Augmented reality is a major trend that, as of late, has been receiving a great deal of attention from a wide variety of enterprises, as well as their interest. The use of computer-made innovations in stores has the potential to improve the experience that customers have, which is especially important in the retail industry. We investigated the impact that augmented reality has on retail establishments in India as part of our study.

Each one of the conceivable outcomes and complications has been thoroughly considered. Customers may be encouraged to buy and try on additional things at retail stores by utilizing technology, which is beneficial for the customers and results in increased revenue for the retailers. Augmented reality has demonstrated that it has good potential to make the process in many nations more active, effective, and important since it was first utilized. This potential has been exhibited since the technology was first employed. This is since its sophisticated technology enables users to connect with virtual and real-time applications and provides them with experiences that are more natural. To collect data for this study from a group of respondents who have gone to the store and have knowledge and experience with purchasing and shopping, we employed surveys that the respondents themselves administered.

A questionnaire that was piloted in the field was used to collect the first set of data, and book reviews of research articles were used to collect the second set of data. Both sets of data were collected in this manner. We utilized IBM SPSS to analyse the primary data. The reason that the incorporation of augmented reality into retail settings has garnered a lot of attention is reinforced by the fact that it gives customers the opportunity to participate in experiences that are true to life. The benefits of virtual reality are discussed in this research article. After going through the findings of the research, augmented reality technologies, in general, offer promising future applications and advantages that may be applied in retail businesses. This conclusion highlights several issues with augmented reality, some of which may be solvable with more research in the near or far future.

2.0 Introduction

The concept of augmented reality (AR), which has been widely discussed in the fields of both technology and business, has, more recently, attracted a significant amount of focus in the retail sector. By superimposing computer-generated material over a user's perspective of the actual world, augmented reality (AR) technology enables users to simultaneously experience virtual and real-world situations. It presents a one-of-a-kind opportunity for retailers to improve the in-store experiences of their customers, which in turn will increase sales. The retail business in India is a market that is continually expanding, and merchants are always seeking for novel methods to stand out in a market that is already quite competitive. The purpose of this study is to analyse the influence that AR technology has had on the retail sector in India.

The purpose of this research is to investigate how augmented reality (AR) technology influences the purchasing experience in Indian retail businesses. We will give insights into the efficacy of augmented reality (AR) technology in the Indian retail business by performing a

complete literature analysis and polling customers who have encountered AR technology in Indian retail outlets.



The application of augmented reality (AR) technology in the retail sector is gaining popularity all around the world. Customers can have a one-of-a-kind and participatory shopping experience, which is something that traditional retail businesses are unable to give. Retailers can provide clients with a more customized and engaging shopping experience by utilizing augmented reality (AR) technology in their establishments. Retailers may utilize augmented reality (AR) technology to present items in a manner that is both more interactive and engaging for customers. This enables buyers to imagine the products being used in their own environments prior to making a purchase. Customers are also given information in real time on the items they are interested in, which enables them to make judgments based on accurate data.

The retail sector in India is undergoing substantial expansion, and it is anticipated that the whole market size would reach \$1.75 trillion by the year 2026. The retail sector in India is likewise undergoing a transition towards organized retail, with huge retail chains and e-commerce businesses taking the lead in market share. To maintain their market share, retail businesses in India need to give their clients one-of-a-kind and individualized shopping experiences. The implementation of augmented reality (AR) technology might help merchants in India differentiate themselves from competitors and improve overall consumer happiness.

The purpose of this study is to evaluate the influence that augmented reality (AR) technology has had on the retail sector in India, with a particular emphasis on how AR technology has affected both consumer happiness and sales.

We will perform a literature study to acquire an overview of the present state of research on augmented reality technology applied in the retail business so that we can address these research questions. We will also be conducting a study of consumers who have used augmented reality technology in Indian retail outlets to determine their opinions of the technology as well as the influence it has had on their shopping experience, level of happiness, and purchasing behaviour.

In summing up, the purpose of this research is to provide light on the ways in which augmented reality technology is affecting the retail sector in India. Retailers in India can make educated decisions about whether to employ augmented reality (AR) technology and how to utilize it to improve their customers' shopping experiences if they first have an awareness of the benefits and problems that come with implementing AR technology in Indian retail businesses. In the end, the purpose of this research is to give relevant information to retailers in India, with the end goal of assisting these businesses to improve their competitiveness in a market that is always shifting.

3.0 Literature Review

Augmented reality (AR) is a phenomenon in which a layer of visual information improves a person's sensory experience in a real-world setting. By combining real and virtual information, "enhanced reality" makes it possible to be immersed in a real-world setting in real time. Augmented reality is often used in advertising, entertainment, teaching, and navigation (Carpigiani et al., 2011).

Augmented reality (AR) technology is currently being utilized in various retail formats, including both online and brick-and-mortar establishments. According to Equity Research (2016), the utilization of these tools has been employed to augment the shopping experience of consumers by rendering it more captivating. The technologies provide enhanced interactivity, real-time information, traceability, and in-store benefits. According to Javonie (2016), although digital try-on features were already available on websites, the introduction of an AR mirror has the potential to enhance interactivity. According to Javonie, Rogers, Gander, and Mourinho (2017), mirrors of this nature are utilized in various settings such as make-up salons, museums, and the dressing rooms of an opera house.

The utilization of augmented reality technologies has been exemplified by the widespread popularity of games such as "Pokemon Go". This app, which incorporates augmented reality, has achieved significant success and global recognition, with over 10 million downloads (Google Play, 2017). According to a study conducted by Future Market Insights in 2017, it was found that. Upon examination, it may be advisable for the retailer to implement gamification strategies within the shopping process to enhance customer engagement during shopping excursions. Prominent corporations such as Apple, Google, HTC, Asus, Samsung, and Lenovo are significantly allocating resources towards the advancement of augmented reality technology and have introduced numerous devices that are compatible with this innovation. Tango, a technology integrated into the device's operating system, enables the transformation of each application's interface into an interactive augmented reality interface. Numerous mobile corporations are allocating significant resources towards research and development to produce economically feasible devices capable of accommodating this technology.

Numerous researchers assert that Augmented Reality (AR) has the potential to transcend its status as an internet fad, particularly in the Indian context, given the increasing number of Indian retailers who are integrating AR technologies into their stores and online platforms. Consequently, it would be prudent to proactively prepare for an AR-dominated future. The study conducted by Poushneh and Vasquez Parraga (2017) examined the effects of augmented reality (AR) on the user experience (UX) in the retail industry, and its consequent impact on user satisfaction and willingness to purchase.

According to a report by Deloitte Australia on Augmented Reality, the implementation of AR technology in Australian retail is facilitated by the presence of awareness, accessibility, and support platforms, as highlighted in a guide for retailers (Deloitte Australia, 2016). The market's viability for implementing these technologies at the forefront of the retail process can be assessed based on these factors. According to a report by Cognizant, the prevalence of support platforms and accessibility to AR technology is greater in developed nations such

as the US. As a result, approximately 67% of retailers are reportedly considering the implementation of AR-based technology in their operations. The source cited is Tandulwadikar A, and the year of publication is 2016. The limited availability of supportive infrastructure in emerging economies such as India has resulted in a sluggish uptake of Augmented Reality (AR) technology. However, according to a report by NASSCOM (Deloitte, 2017), there has been a recent surge in public interest towards AR technology.

According to a report jointly published by the World Economic Forum and Accenture Pvt Ltd, the utilization of modern technology, such as AR, has a significant influence on a retailer's ability to offer personalized services to its customers. The report suggests that this technology will be a crucial factor in the retail industry and will be imperative to possess by the year 2026 (Accenture, 2017). According to Hall and Takahashi (2017), this technology offers cost-effective and highly efficient prototyping tools that enable consumers to customize their products on the spot. According to Kruh, Coonan, and Devyani's (2017) findings from the Retail Assist Global Retail survey, a significant majority of consumers, specifically 77%, anticipate the provision of products and offers that cater to their individual preferences.

3.1 Augmented Reality and Retail

The rapid progress of Augmented Reality (AR) technology and its application in the retail sector have generated considerable scholarly attention.

Unfortunately, extant scholarly literature seems to be fragmented, which may be due to the interdisciplinary character of the topic (Bonetti, Warnaby, and Quinn 2018). The growing body of academic literature on the application of augmented reality (AR) in the fields of retail and e-commerce highlights the need for conducting comprehensive literature reviews. These reviews can evaluate previous research efforts and provide a guide for future research endeavors. Scholars have conducted previous research on AR, which has primarily focused on differentiating between augmented reality, mixed reality, and virtual reality (Flavián et al., 2018). Additionally, scholars have analyzed the active and passive components of AR marketing initiatives (Scholz and Smith, 2016), explored mobile AR research across multiple levels of analysis, including users, devices, and industry (Liao, 2019), and investigated the influence of AR on omnichannel experiences throughout the customer journey (Hilken et al., 2018). In light of our focus on consumer behavior within the retail industry utilizing augmented reality (AR), we have identified two reviews that are of notable significance to our research. Javornik (2016a) commences by presenting a comprehensive summary of the association between the media characteristics of augmented reality (AR) and the responses of consumers. Bonetti et al. (2018) conducted a thorough examination of the extant literature on augmented reality (AR) and delineated three principal domains of discourse in the field. In the following section, we present a brief summary of the primary research discussed in these reviews and clarify how our review complements the knowledge acquired from them.

The authors Bonetti, Warnaby, and Quinn (2018) conducted a chronological review of research related to augmented reality (AR) in the retail industry. They also presented a synthesis of the primary debates that have arisen in this field. The key debates have been categorized into three distinct groups, namely adoption, applications, and acceptance. The discourse pertaining to adoption in the retail industry centres on the implementation of augmented reality (AR) technologies by retailers and the true intentions and advantages of such adoption. Bonetti, Warnaby, and Quinn (2018) inquire whether technology serves as a

mere attention-grabber for consumers or if it genuinely presents a feasible solution. Bonetti, Warnaby, and Quinn (2018) acknowledge that within the realm of applications, AR technology is primarily utilized for virtual fitting rooms in the retail industry. This includes both the e-commerce context and the in-store implementation of AR. Bonetti, Warnaby, and Quinn (2018) conducted a review on the acceptance debate, which primarily focuses on the factors that influence consumers' acceptance of augmented reality (AR) technologies. The technology acceptance model (TAM), as proposed by Davis (1989), is a central framework in this discussion.

Chiang and Chen (2019) examined how AR technology affects customer purchasing intention. AR technology increased consumer purchase intention through perceived utility, simplicity of use, and enjoyment. Bong et al. (2020) examined how AR affects fashion consumers.

The research conducted by Javornik (2016a) provides a distinct differentiation between augmented reality (AR) technology and other forms of interactive technologies. Additionally, the study acknowledges the fundamental characteristics of AR that are associated with consumer reactions. The categorization of the research literature based on the media characteristics of AR has resulted in a lack of clarity in Javornik's (2016a) review regarding the comprehensive amalgamation of consumer responses that can be attained through AR. The literature review conducted by Bonetti, Warnaby, and Quinn (2018) provides a systematic organization of research themes, enabling a clear differentiation between the viewpoints of retailers regarding AR and the perspectives of consumers in terms of their acceptance and adoption of AR technologies. The authors acknowledge the possibility of retailers seeking various consumer responses, such as short-term attention versus long-term benefits. However, their examination of consumer responses is restricted to the acceptance of technology. The present study aims to supplement the literature reviews conducted by Javornik (2016a) and Bonetti, Warnaby, and Quinn (2018) by focusing on the use of augmented reality (AR) in the retail industry. The study intends to categorize the existing literature on AR research in retail based on various consumer behaviour phenomena and theoretical frameworks.

Augmented Reality (AR) can be integrated into retail environments through various means, such as informing, visualizing, trying-on, and placing functionalities. The typology we have constructed is based on previous research that has proposed categorizations of augmented reality (AR) functionalities in both general contexts (Azuma, 1997) and specifically within the retail industry. Tan et al. (2021) have identified four distinct applications of Augmented Reality (AR) technology within the retail industry. The categories, namely entertainment, customer education, product fit evaluation, and post-purchase consumption experience enhancement, pertain to the ways in which consumers utilize augmented reality (AR) technology. However, the present review aims to shift the focus towards the technological design to elucidate the distinct functionalities and their respective applications. Previous studies have emphasized the potential of augmented reality (AR) in shopping contexts to expand the product, the consumer's body, and the consumer's environment. These findings have been documented by Javornik (2016a) and Hoffmann et al. (2022). Drawing upon these theoretical underpinnings, we posit that augmented reality (AR) technology has the potential to augment and facilitate various stages of the customer journey, spanning from information retrieval and product visualization to virtual product testing and contextual object placement

within the consumer's surroundings. The present study posits that Augmented Reality (AR) offers a minimum of four primary categories of functionalities within the context of shopping and retailing. These categories of AR functionalities are identified as Informing, Visualizing, Trying-On, and Placing (ASR). One notable benefit of this typology is its capacity to assign AR applications to distinct categories based on their technological design in an objective manner.

3.1.1 Informing

According to Hoffmann et al. (2022), augmented reality (AR) technology has the potential to augment physical objects, including products, with virtual information. Azuma (1997) has designated this function as "annotation," which is connected to the "educate" category as identified by Tan et al. (2021). AR technology is utilized by tourism agencies to provide location-specific information regarding tourist attractions, while museums employ it to furnish visitors with comprehensive details about exhibits. (Kourouthanassis et al., 2015). The utilization of Augmented Reality (AR) technology in Star view applications such as Night Sky, Sky View, Star Walk, among others, exemplifies the potential of AR to provide information that is tailored to specific contexts. Within the realm of shopping, retailers can utilize augmented reality (AR) technology in physical stores as a means of enhancing the shopping experience with product information (Hilken et al., 2018). This may include providing additional details regarding books (Spreer and Kallweit, 2014) or food products (Joerß et al., 2021; Hoffmann et al., 2022). Virtual overlays pertain to the product, specific sections of the packaging, and even complete shelves. The information conveyed may consist of technical specifications or details regarding the product's provenance, constituent components, allergy advisories, and other pertinent data. Augmented Reality (AR) systems offer a distinct advantage over conventional communication methods by providing personalized information without any physical modifications to the product design or packaging, as noted by Hsu et al. (2021). The aspect in question is of particular interest to brick-and-mortar stores due to their greater limitations in terms of information display within their physical space, as compared to online or mobile retailers. Augmented Reality (AR) technology provides a vast digital space for physical objects to be displayed at the point of sale, without any apparent limitations. According to Joer et al. (2021) and Hoffmann et al. (2022), technology enables consumers to obtain necessary information precisely now and location of their need.

3.1.2 Visualizing

According to Azuma (1997), the visualization feature enables users to observe a simulated three-dimensional representation of a product or to visualize attributes or advantages. The model can be manipulated by users to alter its orientation and appearance, including but not limited to size, color, and shape customization. Empirical research has been conducted to test the function, as exemplified by the mobile application of the German automobile magazine AUTO BILD, which can be scanned to provide a virtual contextual experience (Rese et al., 2017). Previous research has examined the efficacy of AR applications in the visualization of various products, such as shoes (Brito and Stoyanova, 2018) and mugs (Huynh et al., 2019).

3.1.3 Trying-on

The utilization of virtual try-ons enables individuals to enhance their appearance by means of virtual objects. Individuals utilizing this form of augmented reality (AR) technology possess the ability to select an item of clothing, footwear, spectacles, beauty products, or timepieces and experiment with these goods on their own physical form or facial features by means of a virtual fitting-room or virtual mirror (Javornik, 2016b; Hilken et al., 2017; Poushneh and Vasquez-Parraga, 2017; Yim et al., 2017). Virtual try-ons have been developed by sellers of various products, including apparel (Huang and Liao, 2015; Baytar et al., 2020), eyeglasses and sunglasses (Ray-Ban Virtual Try-On, Mister Spex), and cosmetics (Shiseido AR makeup mirror). The employment of this augmented reality feature is a common occurrence in electronic commerce and mobile commerce, as it enables customers to virtually test products, which may not be practical or viable to physically examine prior to purchase. Virtual try-ons have the potential to mitigate the issue of excessively high return rates of ill-fitting products by preventing suboptimal decision-making. It is noteworthy that traditional physical stores have also implemented augmented reality (AR) try-on applications, such as virtual mirrors displayed on stationary widescreen monitors for clothing items (Yuan et al., 2021).

3.1.4 Placing

The AR function known as environmental embedding, as described by Hilken et al. (2017) or referred to as evaluate by Tan et al. (2021), involves enhancing the user's physical environment with virtual elements. This application is commonly utilized in the domains of shopping and retail, particularly in relation to household furniture, as evidenced by previous studies (Javornik, 2016; Heller et al., 2019; Rauschnabel et al., 2019). Furniture planning applications such as IKEA place and Cimagine offer users the ability to virtually place scanned or clicked objects from their catalogues, websites, or applications into their physical living spaces. Furniture planners assist clients in envisioning the aesthetic appeal of furniture within their living spaces. Mishra et al. (2021) have identified paintings as one of the applications, while Hilken et al. (2020) have highlighted wall paint as another potential application.

In the context of shopping, the four augmented reality functionalities vary mainly based on the object captured by the camera of the device and subsequently enhanced on the display. These objects may include the product, a marker, the consumer, or the consumer's physical environment. The functionalities exhibit variations with respect to the virtual objects that are attached, namely information, product visualization, and embedded product. Table 1 presents a methodical summary of the distinctions. The functions of trying-on and placing are noteworthy as they entail a display of the product, akin to visualization. However, these functions integrate the virtual product either within the consumer's image (trying-on) or the surrounding environment (placing). To access visual representations of the functions, we direct readers to peruse select empirical articles featured in our literature review, which contain depictions of the examined augmented reality technology. The function of "informing" can be observed in various shopping applications, as demonstrated by Hoffmann et al. (2022), Joerß et al. (2021), and Speer and Kallweit (2014). Regarding the 'visualizing'

capability, it is suggested to examine the CluckAR application as presented by van Esch et al. (2019), or the AUTO BILD advertisement as demonstrated by Rese et al. (2017). Yim et al. (2017) presented instances of the 'trying-on' feature, such as the Ray Ban Website for sunglasses and the Tissot Website for watches (p. 101). Refer to Javornik's (2016b) demonstration of the IKEA tool for the purpose of the 'placing' function.

It can be argued that certain functionalities have the potential to provide advantages for product categories. For instance, apparel may benefit from the ability to try-on items, while food may benefit from informative features. The differentiation between product categories and functionalities necessitates separate consideration. Augmented Reality (AR) technology has the potential to enhance the consumer experience in various ways. It can provide informative product details to customers in physical stores, facilitate visualization of products in 3D based on catalogue images, enable virtual try-on of products in e-commerce, and even simulate the placement of products in the consumer's wardrobe.

3.2 Augmented Reality and Consumer Behaviour

Augmented reality (AR) has been found to impact the decision-making process through its ability to provide immersive experiences and facilitate shared decision-making. According to Suh and Prophet (2018), technology plays a crucial role in enabling immersive experiences by providing enhanced sensory information and blurring the distinction between the physical and virtual realms. According to Yim, Chu, and Sauer (2017), Augmented Reality (AR) is an immersive technology that facilitates realistic product examination and enhances the decision-making process by providing supplementary visual and sensory information about products. The study reveals that the implementation of AR technology has a positive impact on three specific immersive experiences, which are flow, local presence, and imagery.

The concept of "flow" pertains to a mental state experienced by consumers, characterized by a sense of focused immersion, enjoyment, control, curiosity, and temporal dissociation. This definition is supported by the works of Javornik (2016) and Huang and Liao (2017). According to Javornik (2016b), augmentation has the potential to improve flow and app-centric responses, including app attitudes and recommendation intentions. However, it may also lead to a reduction in cognitive responses. According to Javornik (2016), elevated levels of flow have the potential to augment the cognitive burden of the immersive encounter, thereby impeding the ability of consumers to assimilate brand-specific information. According to the theory of virtual liminoid, the utilization of augmented reality (AR) multisensory experience serves as a driving force for consumers to engage in self-decoration, as proposed by Huang and Liao in 2017. By utilizing the concept of virtual liminoid theory, augmented reality (AR) can fully engage users and induce a state of flow, ultimately leading to increased satisfaction and a greater willingness to devote additional time to AR experiences (Huang and Liao, 2017).

The concept of presence has undergone a transformation, moving from a perception of being physically present in a distant virtual setting, as discussed in the works of Huang and Hsu Liu (2014) and Huang and Liao (2015), to a perception of a virtual object being near the user's actual environment, as explored in the studies conducted by Hilken et al. (2017) and Vonkeman et al. (2017). To facilitate clarity and concision, we shall refer to the AR category denoting the existence of an object as local presence (LP). According to Hilken et al. (2017)

and Vonkeman, Verhagen, and van Dolen (2017), LP offers a genuine and contextualized encounter that convinces customers that they are physically testing the product in their actual surroundings.

The study conducted by Heller et al. (2019) demonstrates that Augmented Reality (AR) facilitates two separate phases of mental imagery, namely the generation and transformation of imagery. Additionally, it improves the fluency of imagery processing and ultimately influences decision-making. The study conducted by Park and Yoo (2020) demonstrates that mental imagery elaboration and quality are improved by interactivity, leading to favourable attitudes and intentions towards products and applications. Furthermore, it has been observed that mental imagery is augmented by sensory modalities such as touch, as reported by Heller et al. (2019). According to Heller et al. (2019), there is a stronger correlation between enhanced cognitive processing and increased decision comfort in the case of contextual products. In relation to the traits of consumers, it has been found that individuals who possess strong visualizing abilities tend to derive comparatively lower utilitarian value perceptions from local presence (Hilken et al., 2017). Moreover, it has been observed that spatial visualizers experience lower levels of processing fluency, decision comfort, and word-of-mouth intentions as compared to object visualizers (Heller et al., 2019).

According to Hilken et al. (2017), the utilization of augmented reality (AR) visualization results in the activation of the limbic system, leading to an increase in experiential value, improvement in decision comfort, and ultimately, an increase in purchase intentions. According to Vonkeman et al.'s (2017) research, the augmentation of product affect through LP leads to a boost in impulsive purchasing. LP addresses the challenges of online shopping, which are associated with the mediated nature of the experience, by creating a sense of proximity to the product. This approach enhances consumers' perception of the product by providing more direct and less risky product information (Verhagen et al., 2014; Vonkeman, Verhagen, & van Dolen, 2017). As a result, LP is associated with higher purchase and recommendation intentions (Hilken et al., 2017; Verhagen et al., 2014).

According to Heller et al. (2019), Augmented Reality (AR) enables the visualization of a 3-dimensional (3D) product representation in the natural environment, with a lasting visual effect. Additionally, Javornik (2016) notes that the imagery produced by AR remains present even after the use of AR technology. The role of mental imagery in consumer decision-making is crucial, as preconception evaluation is reliant on the ability to imagine (Heller et al., 2019). Forming cognitive representations of a product's usability without direct physical interaction poses a significant challenge (Heller et al., 2019).

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According to previous research conducted by Hilken et al. (2019; 2017) and Fan et al. (2020), the implementation of augmented reality (AR) technology can potentially decrease cognitive load and increase fluency and comfort, ultimately leading to an increase in patronage and purchase intentions.

According to Hilken et al. (2019), the ideal arrangement of social augmented reality (AR) generates a feeling of social empowerment for the individual making the recommendation and improves the level of comfort associated with the recommendation. The study's results indicate that the level of decision comfort derived from social empowerment diminishes when the recommender experiences apprehension about potentially creating an unfavourable impression on the decisionmaker. Additionally, the researchers have discovered evidence indicating that Augmented Reality (AR) fosters engagement in personal choice for those who make recommendations. The researchers have discovered that decision-makers are more inclined to follow the recommender's opinion when they experience social empowerment, which in turn increases their ability to make choices. The impact of this phenomenon diminishes when the recommender demonstrates a high level of persuasion intention.

To enhance customer engagement through AR, it is imperative for brands to consider the attitudes of their customers. This consideration would play a pivotal role in shaping the marketing strategy for AR's prospective expansion and profitability. The process of customer decision making comprises five primary stages: Solomon's work (2013) According to Lecinski's (2011) ZMOT hypothesis, customers engage in a process of seeking information and evaluating alternatives before ultimately deciding based on the available knowledge. This aligns with the five metrics. Pachoulakis and Kapetanakis (2012) observed that the implementation of augmented reality (AR) in fashion retail resulted in a rise in market preference and a decrease in return rates. This suggests that augmented reality has a more pronounced impact on pre-purchase behaviours. The authors Pachoulakis and Kapetanakis (2012) have noted that favourable outcomes such as reduced return rates and evangelism, which impact purchasing decisions during the Zero Moment of Truth (Stages 2 and 3), are among the benefits that accrue from product acquisition.



Fig 1: Consumer Decision Making Process

The customer decision-making process suggests that purchasing decisions are made based on rational and pragmatic considerations. It is important to note that certain spending decisions may not be deemed reasonable. For instance, if one engages in purchasing or pumping activities without any utilitarian consideration, the decision-making approach may not be applicable. The decision-making modes illustrate the prevalence of two contrasting consumer types in the realm of consumerism and hedonism. Augmented reality (AR) technology is primarily designed to enhance interactivity and create sensory experiences. Therefore, it is most likely to be dominant among consumers who make decisions based on hedonic motivations. This highlights a misinterpretation of the term "experience". According to the research conducted by Caru and Cova (2003), the process of creating experiences occurs through a combination of customer immersion and marketing partnerships. ARIT's findings confirm and demonstrate that utilizing ART as a medium necessitates active psychological involvement from the user through the integration of interactive elements.

3.4 Augmented Reality and Marketing

The enhanced truth has been identified as a pioneer in improving customer web experiences in the retail business. Numerous companies have benefited from the increased use of AR as an immersive marketing platform. Consumer loyalty and improved customer service were two of the most significant benefits of reinforced fact. Interaction is one of the most essential considerations in establishing an engaging user experience, and AR marketing platforms have developed that interaction by providing a consumer-friendly environment in which to encounter a product in real time (Paris, Guinan, and Kafka, 2016).

Establishing an emotional connection and engaging encounter are crucial for encouraging active customer participation in each retail enterprise. The implementation of artificial reality technology holds promise in creating consumer opportunities that enhance satisfaction and facilitate seamless interaction with products offered by retailers. Moreover, augmented reality technology can assist retailers in offering consumers digitally augmented platform for assessing different products and making personalized selections (Kohler et al., 2011).

Marketers in the advertising industry use augmented reality to advertise their goods. To give the user an augmented reality experience, they mostly use markers that may be accessible by special software or on the business' website. Making the difficult work of creating prototypes simple is another effective application of augmented reality in the business world. Automobile, architecture, manufacturing, and retail are a few sectors that use augmented reality prototype creation. In the retail sector, augmented reality is used to create prototypes of things like shoes so that buyers may get the ideal fit. Retailers like Lowe's, Ikea, Wayfair, and others have created technologies that let customers view their products in entirely virtual settings, giving them a better notion of how the items will fit in their homes (Cooper, et al., 2004). The retail industry is employing a different ITIA concept dubbed the magic mirror to enable shoppers to digitally try on and purchase clothing in front of a mirror or by using an app on their phones.

Augmented Reality (AR) facilitates enhanced levels of interactivity. Extended physical contact or interaction with a product has been observed to foster an emotional attachment between the customer and the product. The use of Augmented Reality (AR) technology has the

potential to extend consumer engagement with a product, allowing individuals to establish a connection with the item in question. This heightened level of interaction may lead to an increased likelihood of purchase. One additional benefit of this technology is that it enables customers to conveniently access real-time information, which can contribute to the development of trust in the retailer or service provider.

Through the utilisation of augmented reality technologies, retailers have the capability to establish an immersive shopping atmosphere that enables consumers to conveniently access pertinent product information via their handheld devices. According to a survey conducted in the United States, a majority of 71% of respondents expressed their willingness to patronise a retailer that provides augmented reality (AR) technology. A significant proportion, specifically 40%, of individuals expressed a willingness to increase their expenditure on a particular product provided they are afforded the opportunity to engage with the product via an augmented reality platform. According to the survey results, a majority of 55% of individuals reported that the integration of augmented reality (AR) technology enhances their shopping experience by increasing enjoyment. According to Daymon's study in 2016, there was an interaction observed.

3.5 Augmented Reality and Consumer Experience

Despite the promising future of AR technology, it currently faces several obstacles that hinder its complete adoption. Several challenges encountered by Augmented Reality (AR) include financial constraints, flexibility issues, insufficient backing infrastructure, among others. Scholz (2016) formulated eight practical recommendations for marketing managers to create augmented reality (AR) experiences that optimize consumer engagement and foster experiential shopping. The high implementation cost of this technology in the Indian market is anticipated to augment the operational expenses of retailers. Furthermore, the expense of these technological devices is considerable for the average consumer. The issue of adaptability arises in the Indian market despite the significant number of smartphone users. Specifically, there is concern regarding the capability of smartphones to support AR technology, as many individuals possess smartphones that lack this feature. Insufficient support platforms: There is a requirement for the enhancement of the information technology platform from a worldwide standpoint to ensure the smooth functioning of these technologies. As per Buller (2017) and Retail Tech Innovation (2017), while the reforms are underway, other markets such as China and Gulf countries are also upgrading their technology to enhance their business operations.

Therefore, based on the significant adoption rates observed in analogous markets and the impact of augmented reality (AR) technology on consumer decision-making processes in countries such as the USA, UK, and Australia, it can be deduced that Indian retailing will be substantially influenced by these technologies soon. Consequently, it is imperative to commence investing in these technologies to meet the constantly evolving consumer behavior and to compete with foreign brands that will be introducing their technologies to the Indian market. Examining these factors within the context of India would facilitate comprehension of the perspective and market conditions of Indian markets with respect to their readiness for augmented reality.

The main benefit of implementing AR technology for a company is the ability to give customers an immersive shopping experience. According to National Retail Federation research from 2017, 49% of respondents said that in-store entertainment makes them visit stores more frequently. According to industry leaders, customer experience will account for over 89% of their competitive differentiator (Willy Kruh, 2017). The usage of augmented reality applications by merchants is advantageous, according to a 2018 study by Watson, Alexander, and Salavati.

Major online shops are heavily utilising augmented reality to improve the shopping experience for customers. Examples of this include the cosmetics retailer Nykaa's "try-on" feature on the app and Lenskart's "endless isle" concept, which enables them to force clients to browse their online inventory if they can't find what they're looking for in the stores. Customers may virtually test on shoes thanks to a Lacoste app. With the help of window displays, in-store signage, and advertising postcards, the app also produced AR experiences. A. Sheehan (2018). As a result, the client base has grown, the retailer's market reach has expanded, and the accessibility of the brands has improved. These examples of AR adoption demonstrate that the aspects we previously identified—better awareness, good support platforms, high personalization, and the provision of interactive buying experiences—have been given priority.

According to the thorough literature review, it was discovered that although augmented reality technology would have a significant impact on Indian retailing in the future, it is still important to understand how consumer purchase decisions are influenced by elements like awareness, accessibility, & support platforms, high levels of product customization, experiential shopping, and the usability of augmented reality in retail, particularly about the younger age group.

3.6 Augmented Reality benefits to brands

Historically, augmented reality (AR) was primarily employed as a tool for marketing purposes, as noted by Blakeman (2014). However, alternative studies indicate that augmented reality (AR) has the potential to serve diverse functions within the apparel retail sector. The implementation of augmented reality (AR) varies due to the diverse approaches that brands employ when integrating AR into their respective business models across various platforms. Marketers must explore the potential benefits of utilizing such technology and implementing it in various ways, in addition to enhancing the purchasing experience for customers.

4.0 Methodology

4.1 Introduction

Augmented reality (AR) is a technology that is growing quickly and could change the shopping market in India. AR lets people try out goods in new and exciting ways. It also gives businesses new ways to market and sell their products. Given how AR could affect retail in India, there is a rising need for study to find out how this technology is being adopted and used, as well as what effects it might have on how people shop.

The research question for this study is: What is the potential impact of AR in the retail sector in India?

4.2 Theoretical Framework

The theoretical framework for the quantitative survey in this research is based on the philosophical perspective of positivism. Positivism prioritizes using scientific methods to gain knowledge about social phenomena. It assumes that an objective reality exists independently of human perception and can be observed and measured objectively. This research will use a structured survey to collect quantitative data from a representative sample of Indian consumers. The aim is to gather objective data to test hypotheses about the potential impact of AR on consumer behaviour in Indian retail.

The study aims to gather information pertaining to the level of consumer awareness regarding Augmented Reality (AR), their inclination towards utilizing AR in the retail industry, and their shopping patterns. The survey will employ a structured format of closed-ended questions that will feature predetermined response options, thereby facilitating statistical analysis of the gathered data. The objective of the survey is to collect unbiased data that can be utilized to evaluate hypotheses concerning the potential influence of Augmented Reality (AR) on consumer behaviour within the retail industry of India.

The positivist theory is right for this study because it allows for the collection of reliable and valid data that can be used to come to objective conclusions about how AR might affect the retail sector in India. Researchers will be less likely to be biased if they use a structured survey instrument with set answers. This will also make sure that the information gathered is accurate and can be compared across participants. Statistical software like IBM SPSS will be used to look for patterns and relationships in the survey results. This will allow for a rigorous and objective assessment of how AR might affect customer behaviour in the Indian retail sector.

The screenshot shows the IBM SPSS Statistics Data Editor interface. The main window displays a list of variables for a dataset named 'AR Abl.sav'. The variables are numbered 1 through 10, each with a specific name, type, width, and decimal places. The 'Measure' column indicates the level of measurement for each variable, and the 'Role' column shows the assigned role. The interface includes a menu bar, a toolbar, and a status bar at the bottom.

	Name	Type	Width	Decimals	Label	Values	Missing	Columns	Align	Measure	Role
1	Q1	Numeric	8	2	Have you used ...	[.00, No]...	None	8	Right	Ordinal	Input
2	Q2	Numeric	8	2	How likely are ...	[1.00, Very l...	None	8	Right	Scale	Input
3	Q3	Numeric	8	2	How much mor...	[1.00, Much...	None	8	Right	Scale	Input
4	Q4	Numeric	8	2	What do you th...	[1.00, Yes, ...	None	8	Right	Scale	Input
5	Q5	Numeric	8	2	How does aug...	[1.00, Positi...	None	8	Right	Scale	Input
6	Q6	Numeric	8	2	How likely are ...	[1.00, Very l...	None	8	Right	Scale	Input
7	Q7	Numeric	8	2	How does AR c...	[1.00, Helps...	None	8	Right	Scale	Input
8	Q8	Numeric	8	2	In the digital ag...	[1.00, Very i...	None	8	Right	Scale	Input
9	Q9	Numeric	8	2	How does AR L...	[1.00, Incre...	None	8	Right	Scale	Input
10	Q10	Numeric	8	2	How does AR L...	[1.00, Enha...	None	9	Right	Scale	Input
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	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	var	var	var	var	var	var	var
1	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00							
2	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00							
3	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00							
4	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00							
5	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00							
6	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00							
7	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00							
8	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00							
9	1.00	1.00	2.00	3.00	1.00	3.00	1.00	1.00	1.00	1.00							
10	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00							
11	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00							
12	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00							
13	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00							
14	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00							
15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00							
16	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00							
17	1.00	2.00	2.00	2.00	2.00	3.00	3.00	4.00	3.00	2.00							
18	1.00	2.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00							
19	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00							
20	1.00	2.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00							
21	1.00	1.00	1.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00							
22	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00							
23	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00							
24	1.00	2.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00							
25	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00							
26	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00							
27	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00							

In general, the positivist philosophy will establish a robust basis for the quantitative survey aspect of this research, enabling the acquisition of dependable and authentic data that can be utilized to make impartial inferences regarding the probable influence of AR in the retail industry in India.

Outline of research philosophy

Construct	Description
Research Ontology	This study's research ontology will be constructivism, which says that reality is made through social relations and depends on what meanings people give it. This ontology is good for this study because it acknowledges how important it is to understand the subjective experiences and meanings that Indian customers and retailers attach to AR in the retail sector.
Research Epistemology	This study's research epistemology will be subjective, which means that it will recognize that knowledge is made up of different people's opinions and points of view. This epistemology is good for this study because it understands that the experiences and attitudes of Indian consumers and retailers toward AR in the

	retail sector are shaped by how they see it.
Research Approach	In this study, we will use quantitative techniques to better understand the topic at hand. The quantitative part will be a survey of Indian consumers to gauge their knowledge of and feelings about AR's potential applications in the retail sector.
Research Strategy	This method is suitable because it permits a thorough investigation of a targeted audience's exposure to and impressions of AR in the retail setting.
Research Methods	Questionnaires will be used as part of this study's data collection process. Indian consumers will be surveyed to learn more about their familiarity with and feelings about augmented reality (AR) in stores.

Research Paradigm

4.3 Research Design:

The descriptive research method was used for the quantitative survey part of the study. Descriptive research is used to describe something, like how customers know about augmented reality and how they feel about it being used in retail. The survey will ask a set of questions to get information about these factors.

4.4 Sampling:

Convenience sampling will be used to choose the survey group. Convenience sampling is a non-probability sampling method in which participants are chosen based on their desire and ability to take part. The people in the group will be Indian consumers who have used the technology. The poll will be sent out via email and social media, and the people who fill it out will be asked to share it with their networks.

4.5 Data Collection:

For the survey, data will be collected using an online survey tool like SurveyMonkey. The survey will be made to find out how much customers know about AR, how they feel about using AR in retail, and how they shop. The poll will be made up of closed-ended questions with set answers.

4.6 Data Analysis:

Using descriptive statistics, the results from the survey will be looked at. Stats that describe things like age, gender, income, and education level will be used to sum up and explain the

sample. Measures of central tendency, like mean and median, and measures of dispersion, like standard deviation and range, will be used to look at the answers to the poll questions.

4.7 Questionnaire:

The survey will be done online with 10 closed end questions and a sample of about 75 Indian consumers of different ages and income levels will be asked to take part. This will help the researchers learn about their experiences with this technology and how it has affected their buying behaviour.

Question	Responses
Have you used an AR in a store while shopping?	a) Yes b) No
How likely are you to buy something after trying it out with AR?	a) Very likely b) Somewhat likely c) Neutral d) Somewhat unlikely e) Very unlikely
How much more time do you spend in a store that uses AR than in a store that doesn't?	a) Much less time b) Somewhat less time c) Same amount of time d) Somewhat more time e) Much more time
What do you think, does AR technology make shopping better?	a) Yes, significantly b) Yes, somewhat c) Neutral d) No, somewhat e) No, significantly
How does augmented reality change the way you think about a brand?	a) Positive impact b) Neutral impact c) Negative impact
How likely are you to shop at a store again if it uses augmented reality?	a) Very likely b) Somewhat likely c) Neutral d) Somewhat unlikely e) Very unlikely
How does AR change the way you make decisions when you're shopping?	a) Helps me make a more informed decision b) Has no impact on my decision-making process c) Confuses my decision-making process
In the digital age we live in now, how important is it for a store to have AR technology?	a) Very important b) Somewhat important c) Neutral d) Somewhat unimportant e) Not at all important
How does AR technology change the way you think about the level of service in a store?	a) Increases my perception of high level of service

	b) Has no impact on my perception of service c) Decreases my perception of high level of service
How does AR technology change the way you shop as a whole?	a) Enhances my shopping experience b) Has no impact on my shopping experience c) Decreases my shopping experience

The questionnaire was given out online through SurveyMonkey that had clear directions. Here is what the volunteers were told to do:

AR technology in retail stores in India has a big positive effect on the retail sector. Respondents are expected to have used AR while shopping in retail stores, be more likely to buy a product after trying it out with AR, spend more time in a retail store that uses AR, be more likely to recommend a retail store that uses AR, and think that AR technology makes shopping better.

The present survey is solely intended for the acquisition of information. The data obtained from this survey will be utilized exclusively for research objectives and will be maintained in a confidential manner. Survey respondents are not obligated to respond to any inquiries that they find discomforting and have the liberty to withdraw from the survey at any point. The outcomes of the survey will be utilized to facilitate informed decision-making and enhance comprehension of the subject matter under investigation.

4.8 Limitations of the Research

- The Survey uses convenience sampling, which relies on willing and accessible participants. This may produce an unrepresentative sample of Indian customers.
- The survey is online, only individuals interested in the issue may participate. This may produce an unrepresentative sample of Indian customers.
- Respondents may give socially desired answers rather than their genuine opinions or behaviours, skewing results.
- The survey design limits data depth. Closed-ended questions may not fully explain retail shoppers' AR views and behaviours.
- Convenience sampling may introduce sampling bias and self-selection bias, limiting the survey's generalizability to Indian customers.
- The author is not an experienced researcher.

4.9 Ethical Considerations

The author acknowledges that work-related questionnaires and interviews may make study participants uncomfortable.

Sipes, Mullan, and Roberts (2020) wrote in their paper "Ethical considerations when using online research methods to study sensitive topics" that sensitive topics require extra care with consent, anonymity, confidentiality, and data security. The author safeguarded these.

- **Informed Consent:** Participants must understand the study's aim, data gathering, and rights as research subjects. Allow them to ask questions and assent voluntarily.
- **Confidentiality:** Protect participants' privacy and survey data. This involves data security and anonymizing survey responses. The survey should allow participants to remain anonymous. This includes anonymous surveys and not collecting names or addresses.
- **Deception:** The survey should not use dishonest methods like inaccurate information or misleading questions to hurt or influence participants.
- **Fairness:** The survey should not discriminate based on race, gender, or socioeconomic status.
- Researchers should be mindful of their prejudices and strive towards objectivity. Survey design, data collecting, and analysis.
- **Data Security:** Survey data must be stored securely and safeguarded from unauthorized access to avoid misuse or data breaches.

5.0 Data Analysis

Survey administered the surveys. Survey was conducted online. The author did not influence questionnaire responses. For percentage or proportionate data, Spence, and Lewandowsky (1991) recommend pie charts and bar charts. Bar charts are superior since humans can see the difference. Gillan, Wickens, Hollands, and Carswell (1998) state that the reader's knowledge, experience, and expectations determine the graph displayed. Based on this, the author will provide the results in pie, bar, and table form for the reader to consume in their preferred way. Data was added and analysed using IBM SPSS and displayed in bar and pie charts to allow readers to view the data in their preferred format. Simple tables displayed the data.

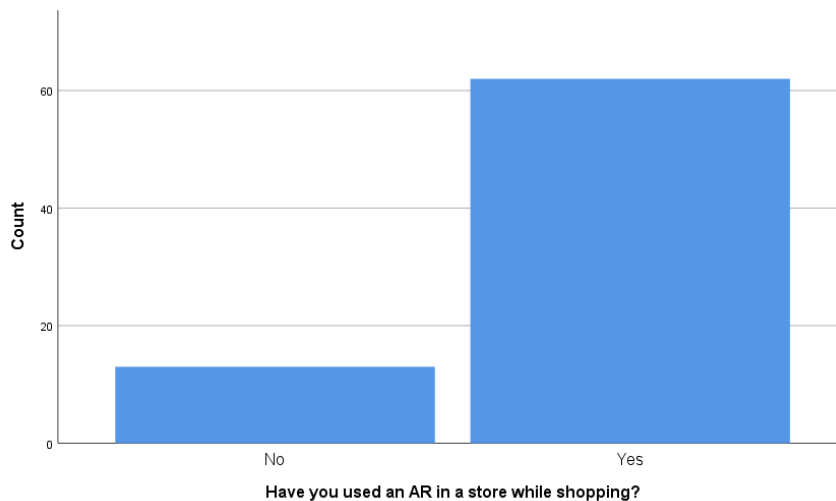
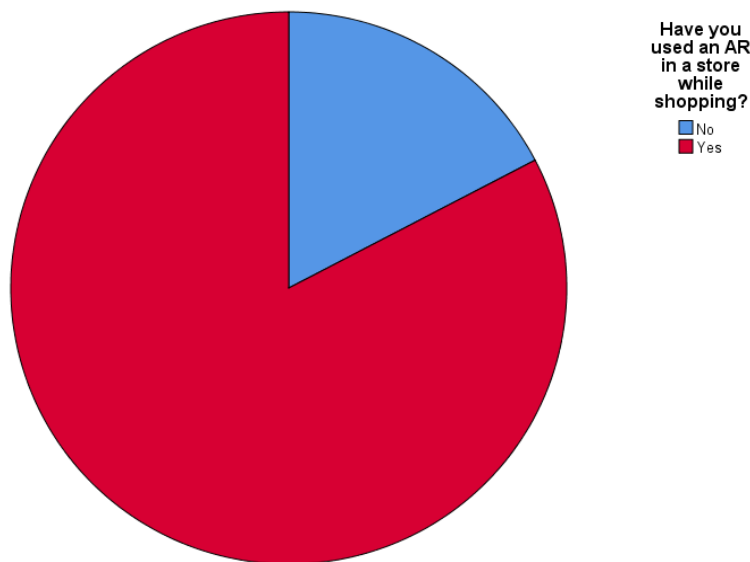
5.1 Question 1: Have you used an AR in a store while shopping?

62 participants (82.7%) utilized AR in a store while shopping, while 13 (17.3%) did not. The mean for this question is 0.8267, indicating that most participants utilized AR while shopping. The median and mode values are both 1.0, confirming that most shoppers have utilized AR. The standard deviation was 0.38108, indicating individuals' replies were consistent. These findings show that many participants have used AR technology in retailers.

Have you used an AR in a store while shopping?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	13	17.3	17.3	17.3
	Yes	62	82.7	82.7	100.0

Mean	Median	Mode	Standard Deviation
.8267	1.0	1.0	.38108



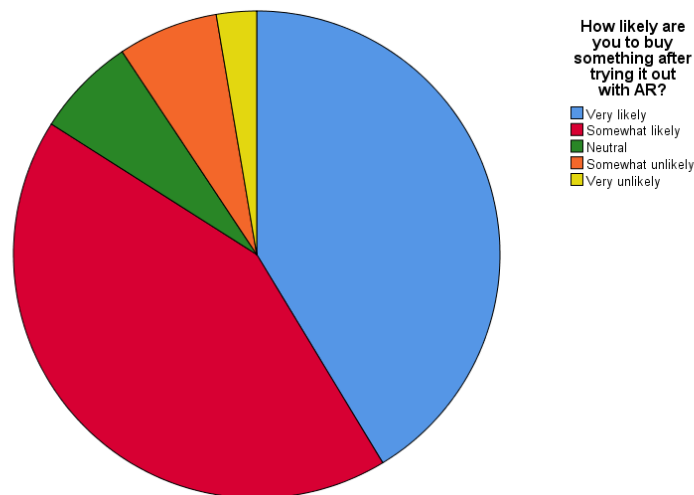
5.2 Question 2: How likely are you to buy something after trying it out with AR?

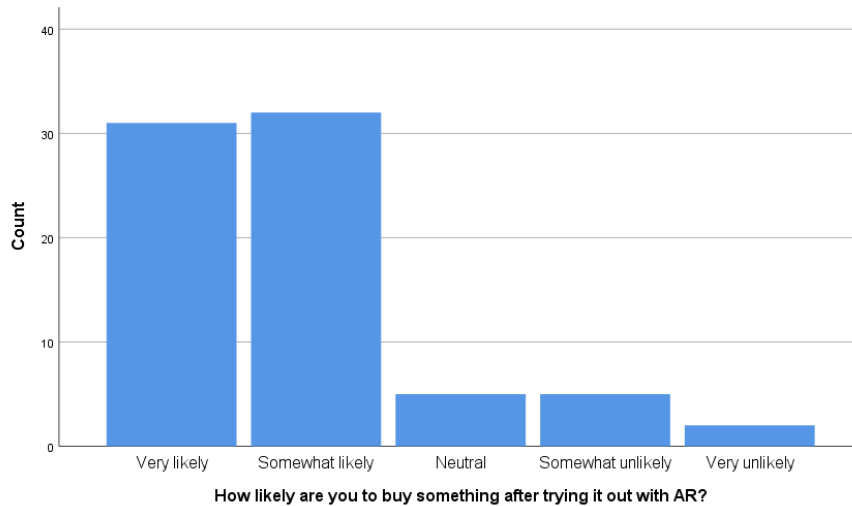
The survey findings reveal that a significant proportion of participants (73.3%) expressed their inclination to make a purchase after experiencing a product through AR. Among these, 41.3% of respondents indicated a high likelihood of purchase, while 42.7% indicated a moderate likelihood. Merely 9.4% of the participants expressed their unlikelihood to make a purchase after experiencing a product through augmented reality.

The arithmetic Mean of 1.87 indicates that, on average, survey participants exhibit a greater propensity to make purchases after engaging with augmented reality technology. The standard deviation of 0.99 is relatively high, which implies that there exists a considerable degree of variability in responses. This variability suggests that factors other than the AR experience may exert an influence on purchase decisions. In general, the results indicate that Augmented Reality (AR) holds promise for exerting a favourable influence on consumer buying behaviour within the retail industry.

How likely are you to buy something after trying it out with AR?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very likely	31	41.3	41.3	41.3
	Somewhat likely	32	42.7	42.7	84.0
	Neutral	5	6.7	6.7	90.7
	Somewhat unlikely	5	6.7	6.7	97.3
	Very unlikely	2	2.7	2.7	100.0
	Total	75	100.0	100.0	

Mean	Median	Mode	Standard Deviation
1.8667	2.0	2.0	.99095





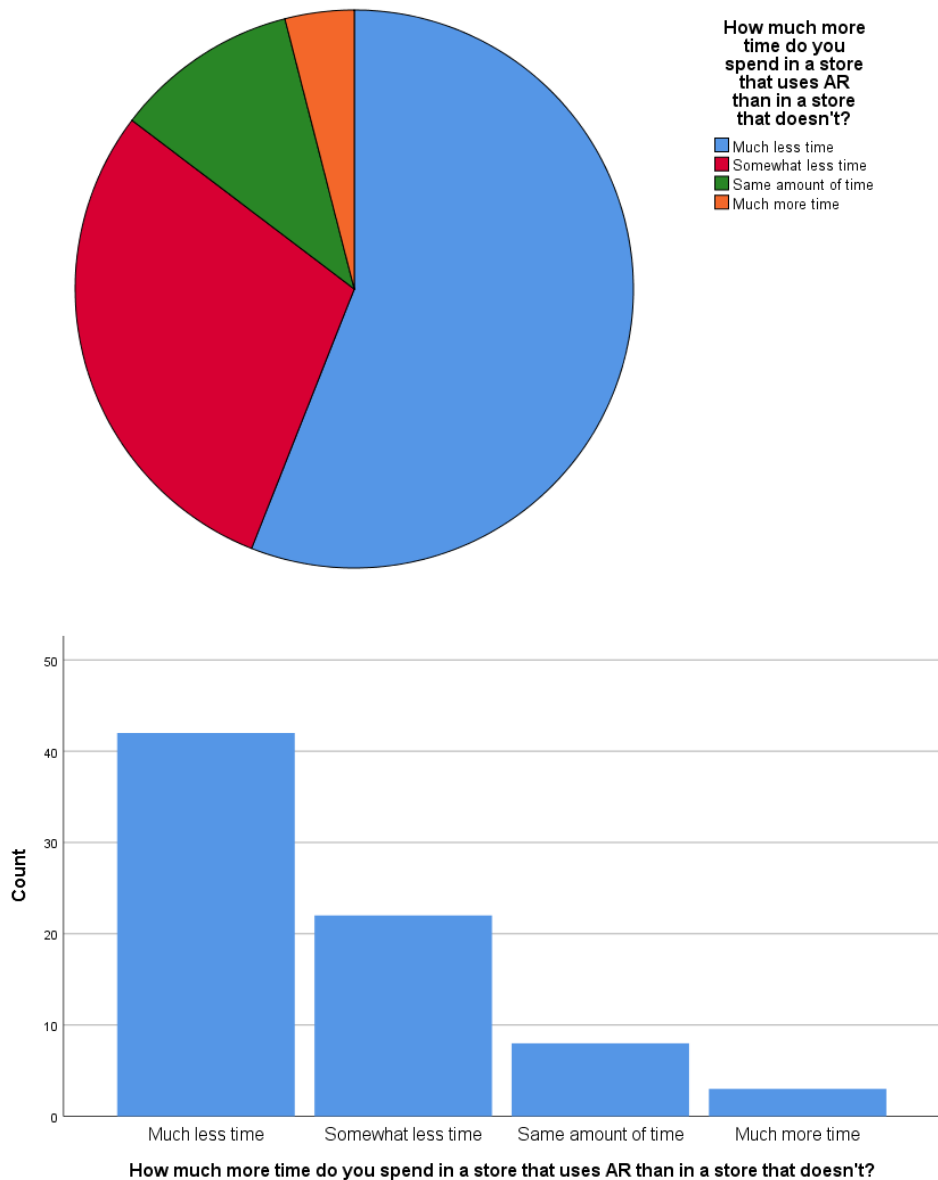
5.3 Question 3: How much more time do you spend in a store that uses AR than in a store that doesn't?

According to the survey findings, a significant proportion of participants (56%) reported spending considerably less time in a store that employs augmented reality (AR) technology in comparison to a store that does not utilize AR. An additional 29.3% of participants reported a reduction in the amount of time spent in a store that employs AR technology, whereas a mere 4% of respondents reported a significant increase in the duration of their visit to such a store.

The calculated mean value of 1.666 indicates that the respondents, on average, allocate a shorter duration of time in a retail outlet that employs AR technology in contrast to a retail outlet that does not utilize AR technology. Nonetheless, the relatively elevated standard deviation of 0.96329 implies a noteworthy degree of diversity in the responses, indicating that factors beyond the mere existence of AR may exert an influence on the duration of time spent by customers in stores. Overall, the findings indicate that the inclusion of augmented reality (AR) technology within a retail establishment may not inevitably result in an extension of the duration of customers' visits to the store.

How much more time do you spend in a store that uses AR than in a store that doesn't?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Much less time	42	56.0	56.0	56.0
	Somewhat less time	22	29.3	29.3	85.3
	Same amount of time	8	10.7	10.7	96.0
	Much more time	3	4.0	4.0	100.0
	Total	75	100.0	100.0	

Mean	Median	Mode	Standard Deviation
1.666	2.0	2.0	.96329



5.4 Question 4: What do you think, does AR technology make shopping better?

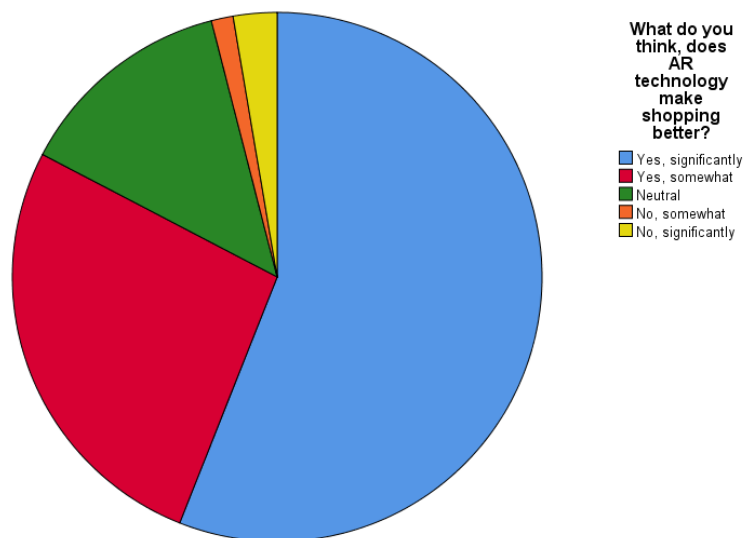
The survey findings reveal that most participants (56%) expressed that the utilization of AR technology enhances the shopping experience. Specifically, 42% of respondents answered affirmatively to the extent of "Yes, significantly," while 26.7% responded positively to the extent of "Yes, somewhat." A notable proportion of participants (13.3%) expressed a neutral perspective regarding the influence of Augmented Reality (AR) on the shopping experience, whereas a minor fraction of respondents (4%) conveyed that the utilization of AR technology has a negative effect on shopping.

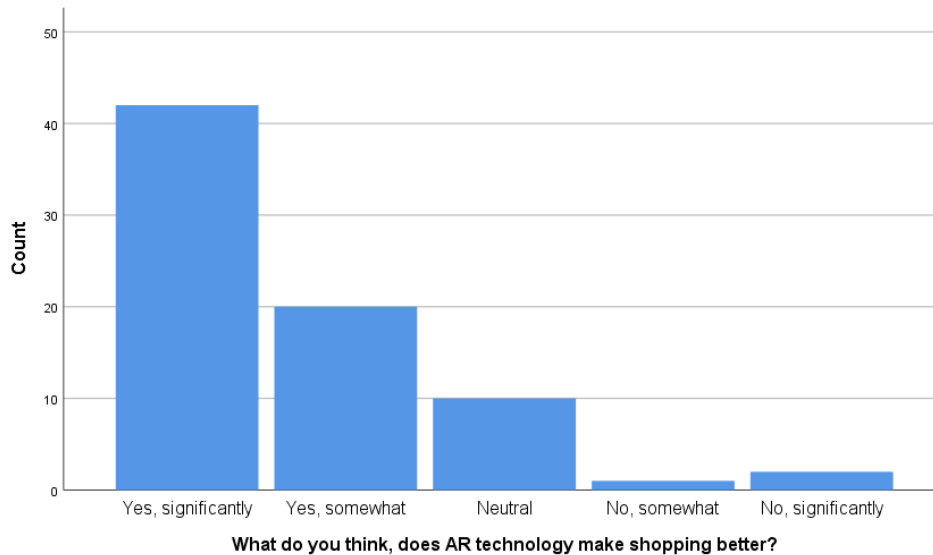
The calculated average score of 1.666 indicates that the respondents hold the belief that the implementation of AR technology in shopping leads to an improvement in the overall shopping experience. Nonetheless, the comparatively elevated standard deviation of 0.96329

implies the existence of a noteworthy degree of variability in responses. This observation suggests that factors beyond the mere presence of AR may exert an influence on the perception of the shopping experience. In general, the results indicate that the implementation of AR technology holds promise for enhancing the retail experience of consumers.

What do you think, does AR technology make shopping better?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes, significantly	42	56.0	56.0	56.0
	Yes, somewhat	20	26.7	26.7	82.7
	Neutral	10	13.3	13.3	96.0
	No, somewhat	1	1.3	1.3	97.3
	No, significantly	2	2.7	2.7	100.0
	Total	75	100.0	100.0	

Mean	Median	Mode	Standard Deviation
1.666	1.0	1.0	.96329





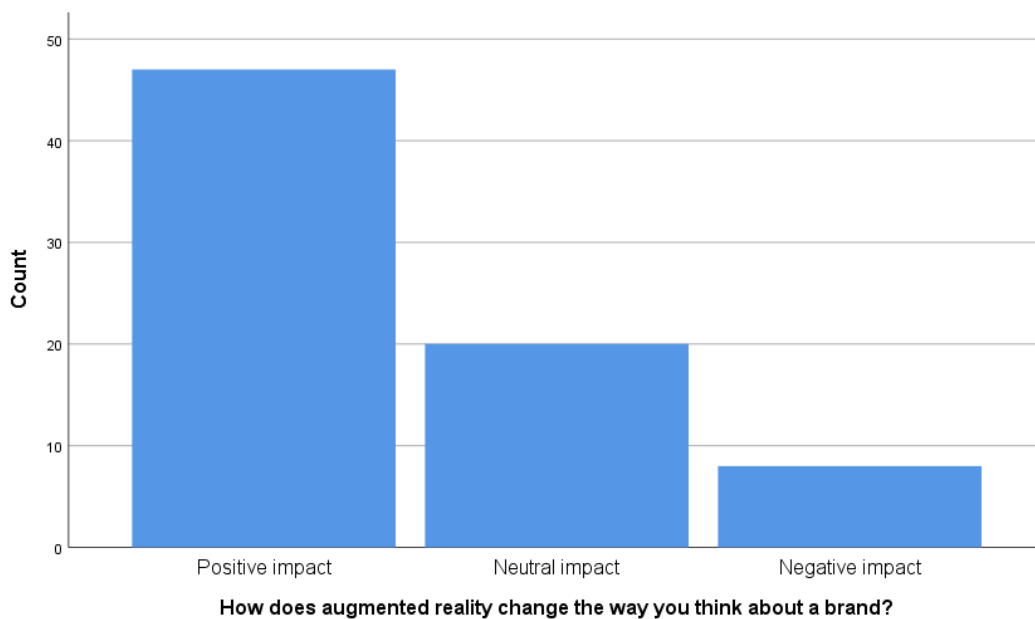
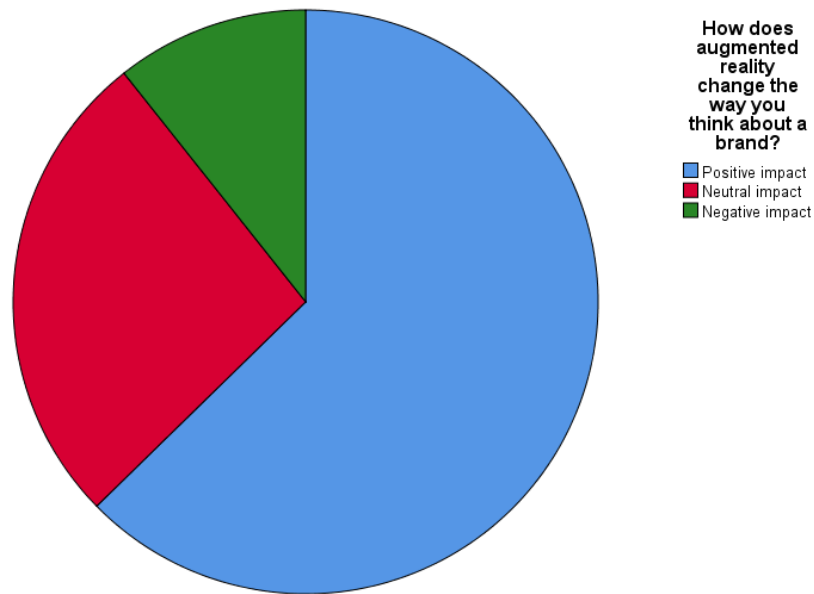
5.5 Question 5: How does augmented reality change the way you think about a brand?

The survey findings reveal that a significant proportion of participants (62.7%) expressed a favourable perception towards a brand due to the implementation of AR technology. A notable segment of participants, comprising 26.7%, reported a neutral effect of Augmented Reality (AR) on their brand perception. Conversely, a minor proportion of respondents, accounting for 10.7%, reported a negative impact of AR technology on their brand perception.

The calculated mean score of 1.48 suggests that the respondents' overall perception of a brand is positively influenced by the implementation of AR technology. The statistical measure of standard deviation, which is relatively low at 0.68497, indicates that the responses obtained from the participants are consistent. This consistency in responses suggests that the use of Augmented Reality (AR) technology has a positive and uniform impact on the perception of a brand. The results indicate that augmented reality (AR) technology holds promise in enhancing brand image and can serve as a viable mechanism for enhancing customer involvement and allegiance.

How does augmented reality change the way you think about a brand?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Positive impact	47	62.7	62.7	62.7
	Neutral impact	20	26.7	26.7	89.3
	Negative impact	8	10.7	10.7	100.0
	Total	75	100.0	100.0	

Mean	Median	Mode	Standard Deviation
1.48	2.0	2.0	.68497



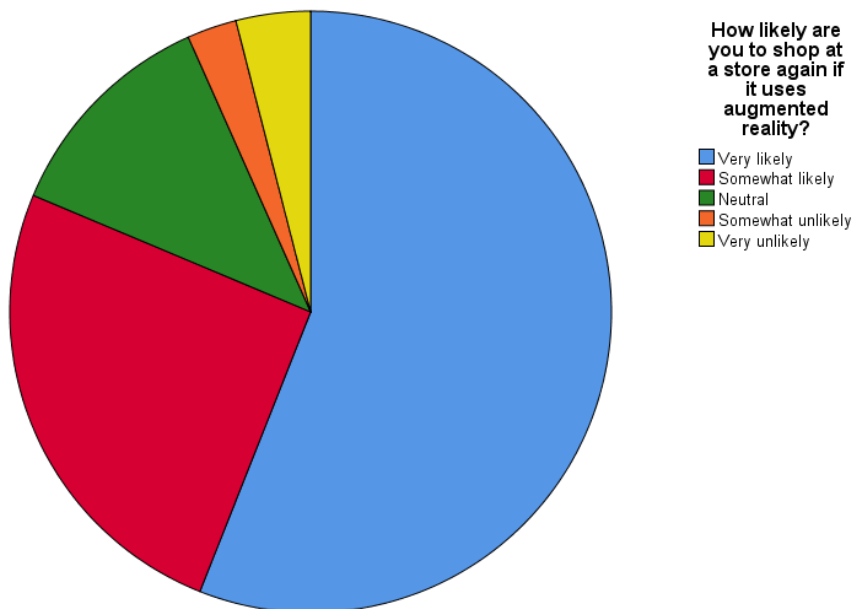
5.6 Question 6: How likely are you to shop at a store again if it uses augmented reality?

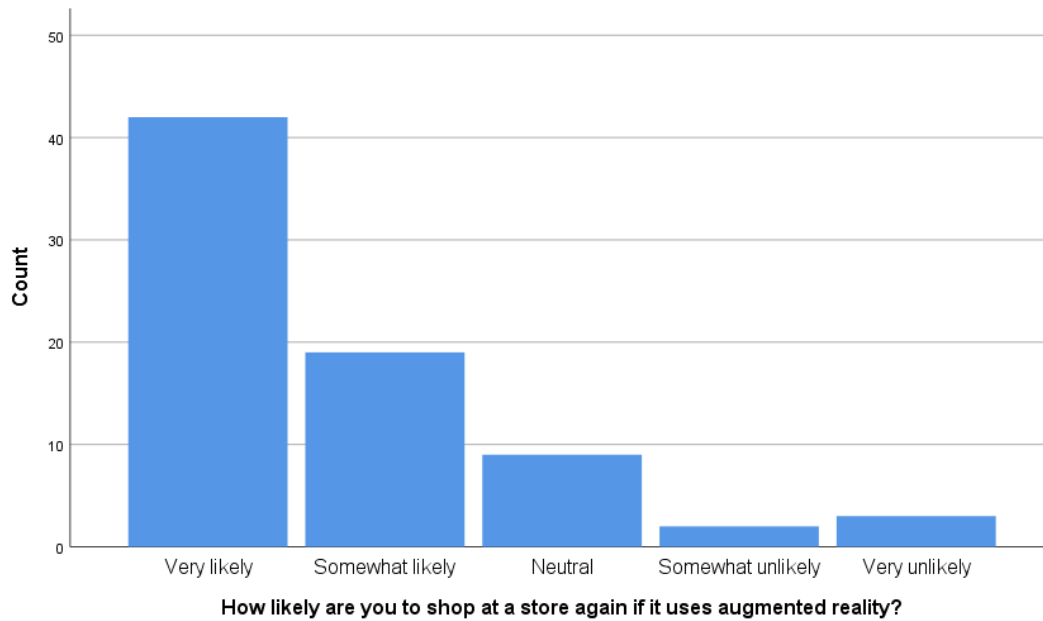
As per the findings of the survey, a significant proportion of the participants (81.3%) have expressed their inclination towards revisiting a store that incorporates augmented reality technology in its operations, either with a high or moderate probability. This implies that the utilization of AR technology may result in favourable outcomes for customer loyalty and retention. It is noteworthy that a minor fraction of participants (6.7%) expresses a degree of unlikelihood in revisiting a store, implying that the employment of AR technology in isolation may not be entirely efficacious in retaining all patrons.

The calculated mean score of 1.733 indicates a general inclination among respondents to revisit a store that employs augmented reality technology. The statistical measure of central tendency, specifically the median score of 2.0, suggests that a significant proportion of participants expressed a moderate level of inclination, or "somewhat likely," to engage in repeat patronage of a retail establishment that employs augmented reality technology. The data indicates a considerable level of variability in the responses, as evidenced by the relatively high standard deviation of 1.0440. This suggests that certain respondents are highly inclined to revisit a store, while others are less likely to do so.

How likely are you to shop at a store again if it uses augmented reality?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very likely	42	56.0	56.0	56.0
	Somewhat likely	19	25.3	25.3	81.3
	Neutral	9	12.0	12.0	93.3
	Somewhat unlikely	2	2.7	2.7	96.0
	Very unlikely	3	4.0	4.0	100.0
	Total	75	100.0	100.0	

Mean	Median	Mode	Standard Deviation
1.733	2.0	2.0	1.0440





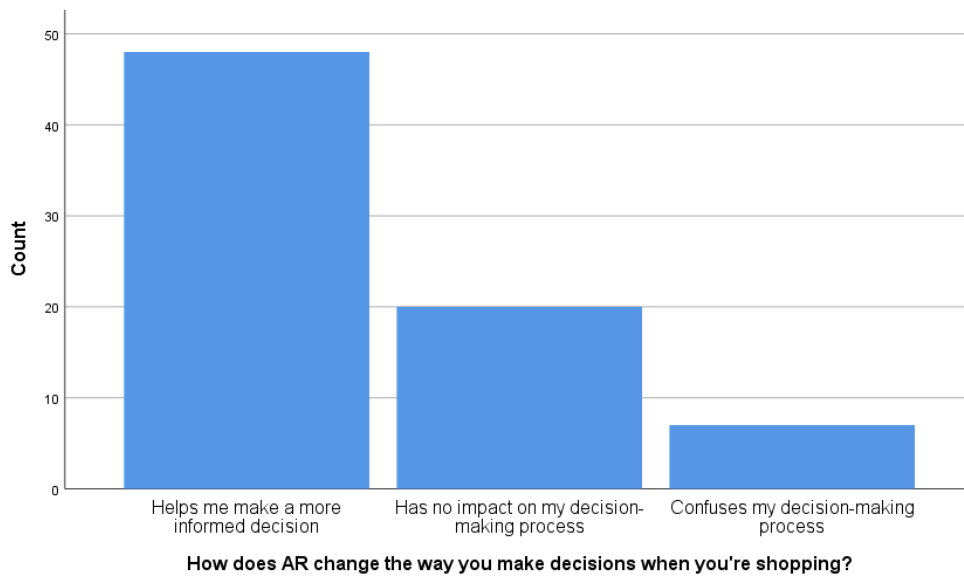
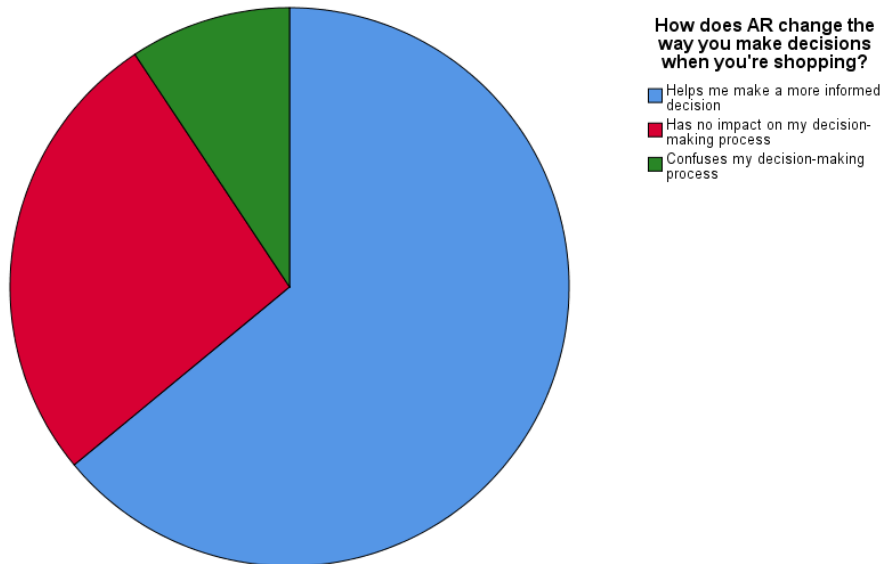
5.7 Question 7: How does AR change the way you make decisions when you're shopping?

According to the findings of the survey, most of the participants, specifically 64%, indicated that the utilization of AR technology assists them in making better-informed decisions when engaging in shopping activities. In the interim, a notable proportion of respondents, specifically 26.7%, indicated that Augmented Reality (AR) does not exert any influence on their decision-making process. Additionally, a smaller proportion of respondents, namely 9.3%, reported that AR has the potential to impede their decision-making process by causing confusion.

The average response of the participants to the question suggests that the utilization of AR technology has a favorable influence on their decision-making process while shopping, as the mean score obtained was 1.4533. The computed value of the standard deviation, which is 0.66360, indicates that there exists a degree of variability in the extent to which Augmented Reality (AR) influences the decision-making process among the participants.

How does AR change the way you make decisions when you're shopping?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Helps me make a more informed decision	48	64.0	64.0	64.0
	Has no impact on my decision-making process	20	26.7	26.7	90.7
	Confuses my decision-making process	7	9.3	9.3	100.0
	Total	75	100.0	100.0	

Mean	Median	Mode	Standard Deviation
1.4533	2.0	2.0	.66360



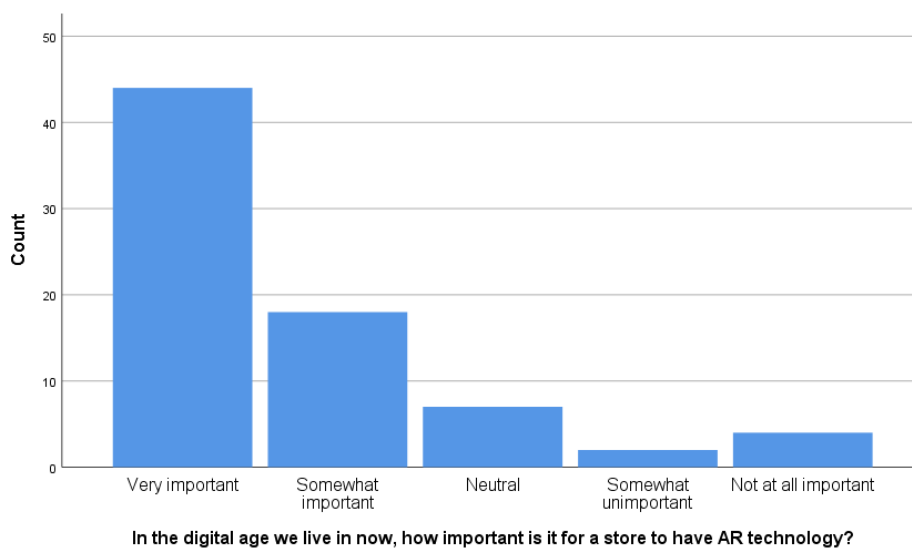
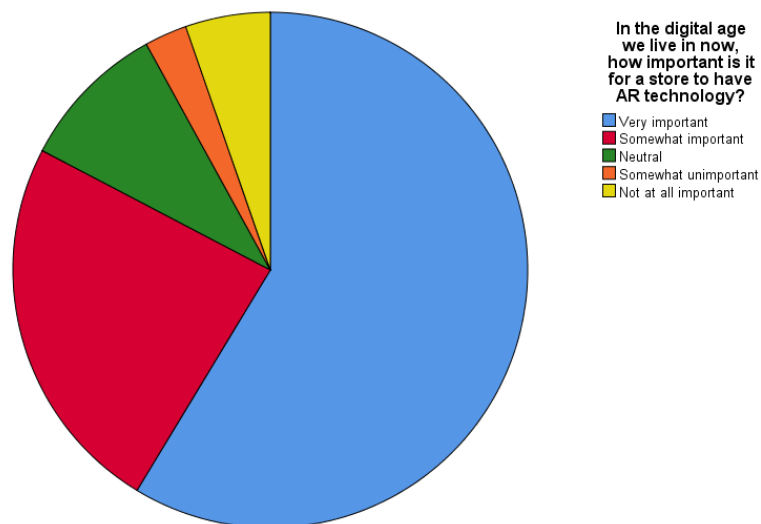
5.8 Question 8: In the digital age we live in now, how important is it for a store to have AR technology?

According to the respondents, in the current digital era, it is of utmost significance for a store to possess AR technology. Most of the respondents, that is, 58.7%, considered it to be "very important," while 24.0% of them deemed it to be "somewhat important." Merely 5.3% of the participants opted for the response option "not at all important." The statistical analysis indicates that the responses were dispersed, with a mean score of 1.72 and a standard deviation of 1.09742. This suggests that some participants held strong opinions regarding the significance of AR technology, while others did not. Considering the present digital era, the

data indicates that the incorporation of AR technology is regarded as a crucial aspect for retail establishments to contemplate.

In the digital age we live in now, how important is it for a store to have AR technology?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very important	44	58.7	58.7	58.7
	Somewhat important	18	24.0	24.0	82.7
	Neutral	7	9.3	9.3	92.0
	Somewhat unimportant	2	2.7	2.7	94.7
	Not at all important	4	5.3	5.3	100.0
	Total	75	100.0	100.0	

Mean	Median	Mode	Standard Deviation
1.72	1.0	1.0	1.09742



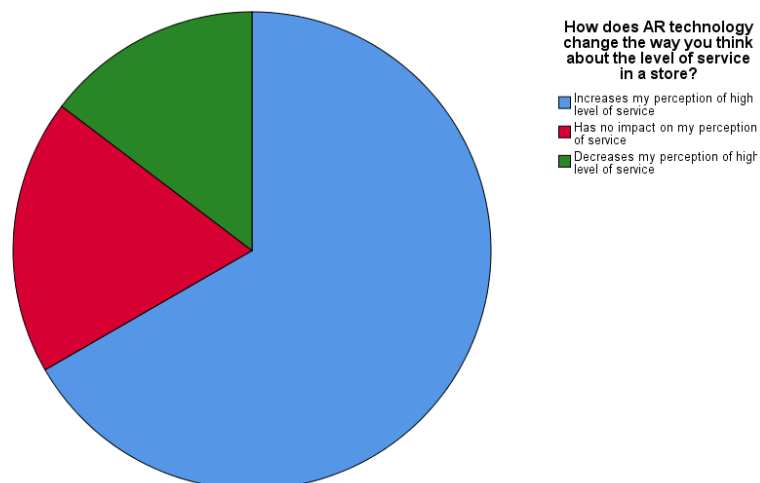
5.9 Question 9: How does AR technology change the way you think about the level of service in a store?

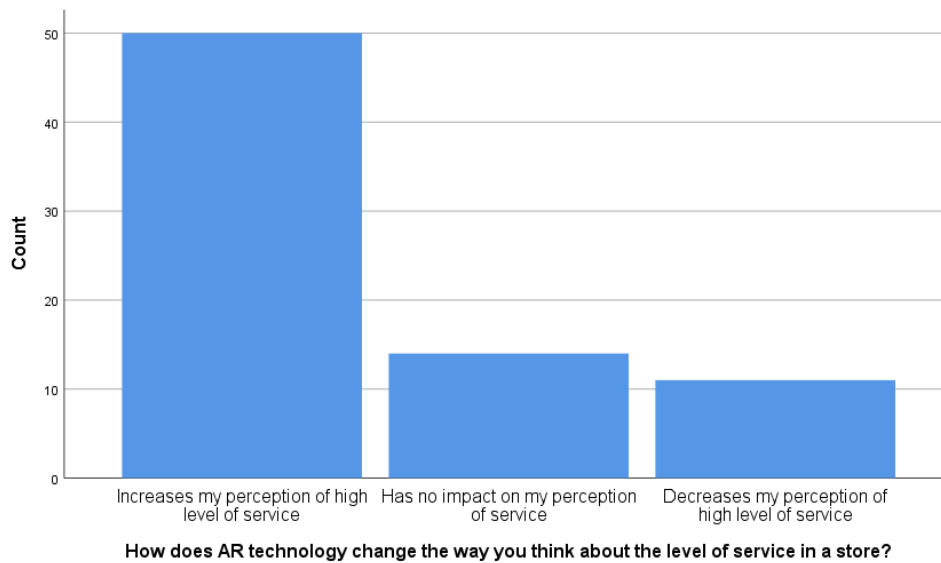
Most of the 75 people who answered (66.7%) agreed that AR technology makes them think that a store has a high level of service, while 14.7% disagreed and thought that it made them think that a store didn't have a high level of service. Also, 18.7% of those who answered said that AR had no effect on how they thought of service. The average score for this question was 1.48, which shows that AR has a good effect on how customers see service in a store. Both the median and the mode were 1, which adds to the idea that most people thought AR had a good effect on service.

The average score of 1.48 shows that most people feel that AR technology has a good effect on how well they think a store serves them. The standard deviation of 0.74180 shows that answers aren't all the same, but most people still think that AR technology makes them feel like they're getting high-level service.

How does AR technology change the way you think about the level of service in a store?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Increases my perception of high level of service	50	66.7	66.7	66.7
	Has no impact on my perception of service	14	18.7	18.7	85.3
	Decreases my perception of high level of service	11	14.7	14.7	100.0
	Total	75	100.0	100.0	

Mean	Median	Mode	Standard Deviation
1.48	1.0	1.0	.74180





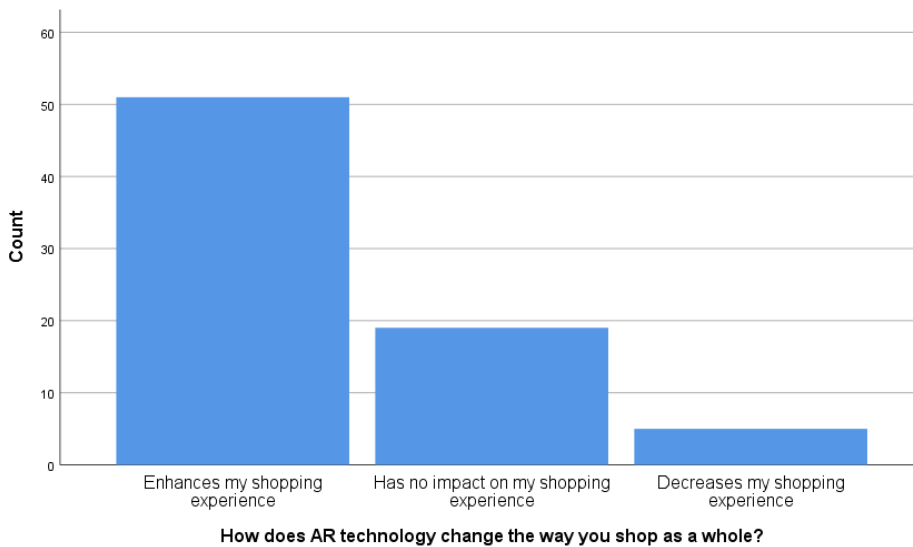
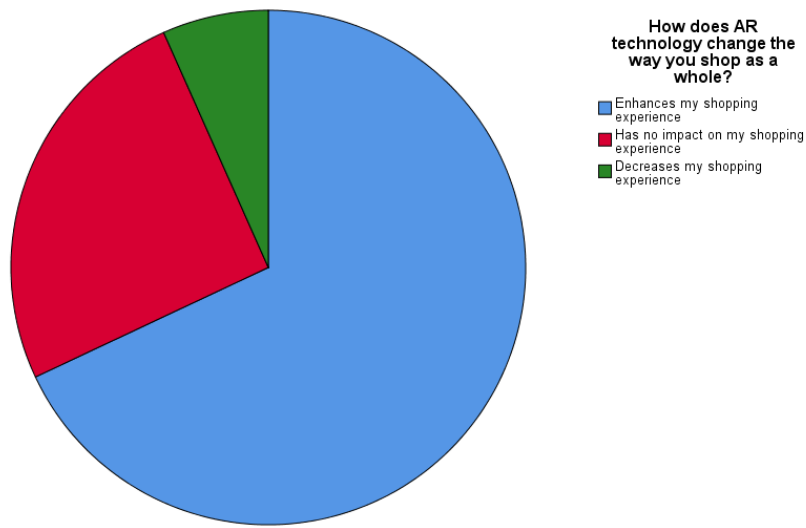
5.10 Question 10: How does AR technology change the way you shop as a whole?

According to the responses provided by the participants, it can be inferred that a significant proportion of them (68%) believe that the utilization of AR technology results in an improvement in their shopping experience. Conversely, a minority of the respondents (25.3%) expressed that the incorporation of AR technology does not have any discernible effect on their shopping experience. Merely a minor segment of the population (6.7%) holds the perception that the utilization of Augmented Reality (AR) technology leads to a reduction in their overall shopping experience.

The calculated mean value of 1.3867 indicates that the utilization of AR technology has a favourable influence on the overall shopping experience, as an average. The calculated value of standard deviation, which is 0.61278, suggests that the responses exhibited a relatively low degree of variability and were consistent.

How does AR technology change the way you shop as a whole?						
		Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	Enhances my shopping experience	51	68.0	68.0	68.0	
	Has no impact on my shopping experience	19	25.3	25.3	93.3	
	Decreases my shopping experience	5	6.7	6.7	100.0	
	Total	75	100.0	100.0		

Mean	Median	Mode	Standard Deviation
1.3867	1.0	1.0	.61278



5.12 Correlation Analysis

	How likely are you to buy something after trying it out with AR?	How likely are you to shop at a store again if it uses augmented reality?
How likely are you to buy something after trying it out with AR?	Pearson Correlation 1	.435**
	Sig. (2-tailed)	.000
	N	75
How likely are you to shop at a store again if it uses augmented reality?	Pearson Correlation .435**	1

again if it uses augmented reality?	Sig. (2-tailed)	.000	
N		75	75

** . Correlation is significant at the 0.01 level (2-tailed).

The obtained correlation findings indicate a moderate positive association between the propensity to make a purchase after experiencing a product through augmented reality and the probability of revisiting a retail outlet that employs augmented reality technology. The analysis reveals a noteworthy positive correlation between the variables, with a correlation coefficient of .435 and a p-value of .000. This finding suggests that consumers who exhibit a higher propensity to make purchases following an augmented reality experience are also more inclined to revisit a retail establishment that employs AR technology.

		How much more time do you spend in a store that uses AR than in a store that doesn't?	What do you think, does AR technology make shopping better?
How much more time do you spend in a store that uses AR than in a store that doesn't?	Pearson Correlation	1	.267*
	Sig. (2-tailed)		.021
	N	75	75
What do you think, does AR technology make shopping better?	Pearson Correlation	.267*	1
	Sig. (2-tailed)	.021	
	N	75	75

*. Correlation is significant at the 0.05 level (2-tailed).

Based on the presented correlations, a noteworthy positive correlation exists between the duration of an individual's stay in a store that employs AR technology and their subjective evaluation of the extent to which AR technology enhances the shopping experience. The statistical analysis reveals a significant correlation between the variables with a correlation coefficient of 0.267, at a significance level of 0.05 (two-tailed). This implies that individuals who hold the perception that AR technology enhances the shopping experience may exhibit a higher propensity to prolong their stay in a retail establishment that employs such technology. Nevertheless, the correlation exhibits a moderate strength, implying the existence of other variables that could potentially impact the duration of time an individual spends in an AR-enabled store.

		How does augmented reality change the way you think about a brand?	How does AR change the way you make decisions when you're shopping?
How does augmented reality change the way you think about a brand?	Pearson Correlation	1	.555**
	Sig. (2-tailed)		.000
	N	75	75
How does AR change the way you make decisions when you're shopping?	Pearson Correlation	.555**	1
	Sig. (2-tailed)	.000	
	N	75	75

** . Correlation is significant at the 0.01 level (2-tailed).

The results of the correlation matrix indicate a statistically significant positive correlation ($r=0.555$, $p<0.01$) between the impact of augmented reality on consumers' brand perception and its influence on their shopping behaviour. The proposition posits that individuals who hold a favourable perception of augmented reality (AR) technology as a means of assessing merchandise may concurrently cultivate a more favourable attitude towards brands that employ this technology. On the other hand, customers who encounter confusion or unfavourable encounters with augmented reality (AR) technology may develop an unfavourable attitude towards brands that employ it.

		How does AR change the way you make decisions when you're shopping?	How does AR technology change the way you think about the level of service in a store?
How does AR change the way you make decisions when you're shopping?	Pearson Correlation	1	.540**
	Sig. (2-tailed)		.000
	N	75	75
How does AR technology change the way you think about the level of service in a store?	Pearson Correlation	.540**	1
	Sig. (2-tailed)	.000	

the level of service in a N store?	75	75
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** . Correlation is significant at the 0.01 level (2-tailed).

The results of the correlation analysis indicate a statistically significant positive correlation between the variables "How does AR alter decision-making processes during shopping?" and "How does AR technology impact perceptions of service quality in a retail setting?" ($r = .540$, $p < .01$). The proposition posits that patrons who perceive that augmented reality (AR) modifies their shopping decision-making process are correspondingly inclined to perceive that AR amplifies their assessment of the quality of service provided by a retail establishment. The observation suggests that augmented reality (AR) technology is perceived as a beneficial instrument that enhances the overall retail experience for consumers.

	How does AR technology change the way you shop as a whole?	What do you think, does AR technology make shopping better?
How does AR technology change the way you shop as a whole?	Pearson Correlation 1	.519**
	Sig. (2-tailed)	.000
	N	75
What do you think, does AR technology make shopping better?	Pearson Correlation .519**	1
	Sig. (2-tailed)	.000
	N	75

** . Correlation is significant at the 0.01 level (2-tailed).

A noteworthy positive correlation has been observed between the act of testing a product with Augmented Reality (AR) and the probability of making a purchase of that product. Additionally, a positive correlation has been established between the utilization of AR within a store and the duration of time spent by the consumer in that store. Moreover, noteworthy positive associations have been observed between augmented reality (AR) technology and diverse facets of the retail encounter, encompassing the perception of elevated service standards, the probability of revisiting a store, and the general notion that AR enhances the shopping experience. The correlations indicate that the utilization of AR technology may yield favourable outcomes across multiple dimensions of the retail experience.

		How likely are you to buy something after trying it out with AR?	How does AR change the way you make decisions when you're shopping?
How likely are you to buy something after trying it out with AR?	Pearson Correlation	1	.401**
	Sig. (2-tailed)		.000
	N	75	75
How does AR change the way you make decisions when you're shopping?	Pearson Correlation	.401**	1
	Sig. (2-tailed)	.000	
	N	75	75

** . Correlation is significant at the 0.01 level (2-tailed).

The statistical analysis reveals a significant correlation between the variables "likelihood of purchase after AR trial" and "impact of AR on shopping decisions" at a two-tailed significance level of 0.01. The Pearson correlation coefficient for these variables is 0.401. The observation implies a direct correlation between the two variables, indicating that the utilization of AR technology in the context of shopping can potentially enhance the probability of a successful transaction. The correlation's strength is moderate, suggesting that purchasing decisions can be influenced by factors other than AR technology.

		How much more time do you spend in a store that uses AR than in a store that doesn't?	How likely are you to shop at a store again if it uses augmented reality?
How much more time do you spend in a store that uses AR than in a store that doesn't?	Pearson Correlation	1	.139
	Sig. (2-tailed)		.235
	N	75	75
How likely are you to shop at a store again if it uses augmented reality?	Pearson Correlation	.139	1
	Sig. (2-tailed)	.235	
	N	75	75

The results of the correlation analysis indicate that there is no statistically significant correlation between the duration of time spent in a store that employs augmented reality

technology versus a store that does not, and the likelihood of a customer returning to shop at the augmented reality-enabled store. The obtained correlation coefficient of 0.139 suggests a weak and statistically insignificant association.

6.0 Discussion

The findings of the study indicate that the Augmented Reality (AR) technology shows tremendous promise for boosting the shopping experience that customers have in the retail business in India. It can be deduced from the fact that most participants (82.7%) had used augmented reality technology while shopping in a store that the use of AR technology is becoming increasingly widespread in the retail sector. Additionally, 73.3% of participants indicated that they were likely to make a purchase after experiencing a product through AR, while only 9.4% of participants indicated that they were unlikely to make a purchase after experiencing a product through AR. Based on the findings, it appears that augmented reality technology has the potential to exert a positive impact on the purchasing decisions made by customers in the retail sector.

The results of the poll show that most respondents (56%) reported spending a considerable amount less time at a store that makes use of augmented reality technology in comparison to a store that does not make use of AR technology. However, a significant portion of participants (13.3%) expressed a neutral perspective regarding the influence of AR on the shopping experience. On the other hand, a small percentage of respondents (4%) expressed that the utilization of AR technology has a detrimental effect on shopping. According to the findings, the use of augmented reality technology within a retail business does not automatically result in an expansion of the amount of time that clients spend shopping at the establishment.

In addition, most participants (56%) believe that the implementation of AR technology improves the overall quality of the shopping experience. Based on these findings, it appears that incorporating augmented reality technology into retail environments has the potential to significantly improve customers' shopping experiences. In addition, the findings of the poll show that a sizeable percentage of respondents (62.7%), expressed a favourable opinion towards a brand because of the application of AR technology. This suggests that augmented reality (AR) technology offers potential in increasing brand image and can serve as a feasible tool for enhancing consumer participation and loyalty. Additionally, this implies that AR technology holds promise in enhancing customer engagement.

Finally, an overwhelming majority of the participants, 81.3%, have stated that they are interested in returning to a store soon that makes use of augmented reality technology in some capacity, either with a high likelihood or a moderate chance. This provides support for the hypothesis that the application of AR technology might lead to favourable consequences for the loyalty and retention of customers. It is interesting to note that a very small percentage of participants (6.7%), expressed a degree of unlikelihood in returning to a business, which suggests that the use of AR technology in isolation may not be totally effective in keeping all customers.

The results of the survey show that augmented reality (AR) has the potential to change the way people buy things in the retail business. Heller et al.'s (2019) study shows that AR makes

it easier to handle mental images, which in turn affects how people make decisions. Other studies have also shown that augmented reality (AR) technology may be able to reduce the amount of work your brain has to do and make things easier and more comfortable for you, which could make more people want to use it and buy things. Also, the best way to set up social AR gives the person suggesting a feeling of social authority and makes the recommendation feel more comfortable. Based on these results, it seems that AR technology could improve the shopping experience for customers.

Chiang and Chen (2019) examined how AR technology affects customer purchasing intention. AR technology increased consumer purchase intention through perceived utility, simplicity of use, and enjoyment. Bong et al. (2020) examined how AR affects fashion consumers. AR increased buyers' perceived value and buying intent. AR technology also enhanced word-of-mouth marketing since consumers were more willing to share their experiences. These findings confirm the survey findings that AR favourably affects customer purchase behaviour. Lwin et al. (2018) examined how AR affects purchase decisions. AR improved customers' product assessments and buy inclinations. The survey also indicated that AR technology users were more willing to share their experiences, increasing brand exposure and sales. These findings reflect the survey results showing many participants reported their tendency to buy after seeing a product through AR.

Businesses increasingly use augmented reality (AR) technology to improve the purchasing experience for consumers. In a study conducted by Chung et al. (2017), it was discovered that 82.7% of participants used augmented reality (AR) in a store while purchasing, indicating that AR technology is now widely embraced by consumers. Moreover, the study found that 73.3% of participants were inclined to make a purchase after experiencing a product through augmented reality, indicating that AR technology has the potential to positively influence consumer purchasing behaviour in the retail industry. Similarly, Lee and Kwon (2018) discovered that the implementation of augmented reality (AR) technology in retail stores enhances the purchasing experience and positively impacts brand image. Most participants (56%) indicated that augmented reality technology enhances the purchasing experience. In addition, a sizeable proportion of participants (62.7% to be exact) viewed a brand favourably due to the implementation of AR technology.

Shin and Kim (2020) found in another study that the implementation of augmented reality technology in retail stores can increase consumer satisfaction and loyalty. The study discovered that consumers who experienced augmented reality in-store had a more favourable perception of the store and were more likely to return. However, while the implementation of augmented reality (AR) technology in retail stores has numerous benefits, it may not necessarily result in longer consumer visits. In a study conducted by Kwok et al. (2018), it was discovered that respondents, on average, spend less time in a retail outlet that employs augmented reality (AR) technology compared to a retail outlet that does not employ AR technology. However, there is a significant degree of variation in the responses, indicating that factors other than the mere presence of AR may influence the length of time customers spend in stores.

There is mounting evidence that augmented reality (AR) technology has the potential to improve the consumer experience in a variety of retail environments. AR can be used to provide consumers with more detailed product information, offer virtual try-ons or measurements, and create engaging and entertaining in-store displays. (Deng and Poole, 2021; Kim et al., 2021; Verhoef et al., 2020). Previous research has also demonstrated that augmented reality can increase consumer engagement and increase purchase intent. For instance, Gao et al. (2019) discovered that consumers who used augmented reality in a furniture store were more likely to make a purchase and were more satisfied with their purchasing experience.

Numerous major brands and retailers are integrating augmented reality into their in-store and online purchasing environments. Ikea, Sephora, and Nike have all launched augmented reality (AR) applications that enable customers to visualize products in their own homes or virtually try on apparel. Despite the potential benefits of augmented reality in retail, there are several obstacles and restrictions to consider. For instance, implementing the technology can be costly, and not all consumers may be comfortable or accustomed to using augmented reality in a purchasing context. In addition, there may be technical issues or bugs that diminish the client experience. (Deng and Poole, 2021; Verhoef et al., 2020)

Future research in this area could investigate how various factors, such as the type of product or the customer's prior experience with augmented reality, may influence their perceptions and engagement with augmented reality technology in a retail setting. In addition, it could be beneficial to investigate how retailers can effectively integrate augmented reality (AR) into their stores and online channels to maximize AR's potential benefits for consumers and businesses.

In conclusion, the available literature supports the findings of the presented survey, indicating that augmented reality technology has become broadly accepted by consumers and has a positive effect on customer purchasing behaviour, brand image, and brand loyalty. However, it is crucial to observe that the impact of augmented reality technology on the length of customers' store visits may be influenced by factors other than the existence of augmented reality. These factors and their effect on customer behaviour must be investigated through additional study.

The research supports the idea that AR technology may improve customers' shopping experiences, help them make better selections, and increase brand perception. AR technology affects these aspects to varying degrees. Cho and Sagynbekov (2018) discovered that AR technology improves consumer experience by creating a more immersive and engaging purchasing environment. AR technology improves customer pleasure, which may lead to repeat purchases and brand loyalty, the study concluded. A.T. Kearney (2018) discovered that AR-using shoppers were more inclined to buy. AR technology helps customers envision things more realistically and interactively, according to the survey.

7.0 Conclusion

This survey's sample is all the same age, and responses may be skewed because the sample size is small, and each respondent is enthusiastic about technology. To surmount the limitation, future research should consider conducting a larger survey with a larger sample size.

In conclusion, the findings of the study indicate that augmented reality technology has a favourable influence on a variety of areas of the retail experience. These factors include consumer buying behaviour, perception of the brand, customer loyalty and retention, and customer loyalty and retention. However, it is essential to keep in mind that the introduction of augmented reality (AR) technology might not automatically result in an extension of the amount of time that customers spend shopping at the store. The findings of the poll show, overall, that the application of augmented reality technology has a great deal of potential for boosting the shopping experience provided to customers by businesses operating in the Indian retail sector.

Based on the results of this poll, there are several things that could be studied in the future:

First, it might be a good idea to do a more in-depth study of the things that influence consumers' buying choices outside of the AR experience. Even though the poll results show that AR makes people more likely to buy, the high standard deviation shows that there are probably other factors at play. More study could help figure out what these factors are and give us a better idea of how AR affects user behaviour.

Second, it might be useful to investigate how different kinds of AR events change how people act. For example, the poll didn't make a difference between augmented reality experiences that are built into a store and those that can be reached through a mobile app. Researching the effects of these different kinds of AR events could give stores useful information and help them decide how to use AR technology.

Third, future study could look at how AR technology works in different kinds of stores. For example, it might be interesting to see how AR technology changes how people act in a high-end shop versus a cheap retail store. Understanding how AR works in different types of retail settings could help shops decide if and how to use AR. Overall, the results of this survey show that AR technology has a lot of promise to improve the shopping experience and change how people act. More study could help us understand the effects of AR technology in a more nuanced way and help businesses figure out how to use this technology in their stores.

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