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Changing Online Shopping Experiences: Investigating Quality of Augmented Reality (AR) Experience on Behavioral Intentions using S-O-R Theory

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Abstract: It is an Augmented Reality (AR) experience-induced study investigating a framework centered on the Stimulus-Organism-Response (S-O-R) theory comprising the quality of AR experience, perceived value, Augmented Reality Information Privacy Concern (ARIPC), and behavioral intentions in online shopping customers. The data was collected from Pakistani customers through a self-administered questionnaire after they experienced the AR app. In total, 1457 responses were examined using the Partial Least Square method in SmartPLS4. The findings reveal that the quality of AR experience, ARIPC, and perceived value are the key determinants of behavioral intentions in online shopping. Additionally, this study shows that ARIPC and perceived value fully mediate the relationship between the quality of AR experience and behavioral intentions. Moreover, a serial mediation also exists between the quality of AR experience and behavioral intentions through ARIPC and perceived value in the model. These findings offer a better insight for academicians and practitioners of consumer behavior in online shopping using immersive technology like AR. No study has investigated the online shopping behavior of Pakistani customers using the quality of AR experience in the footwear industry. Moreover, ARIPC has been empirically tested first time in this study showing that the benefits of using AR overcome AR-related privacy concerns.

Keywords: Quality of AR experience, Augmented reality information privacy concern, Perceived value, Behavioral intentions, S-O-R theory, AR marketing

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INTRODUCTION

The limited information available to customers while shopping online and the inability to try or touch the product increases the significance of using dynamic and immersive technology in online businesses (Petit, Velasco, & Spence, 2019). Online companies' revenue generation is currently more significant than brick-and-mortar (Garcia, 2018). Additionally, the growing number of internet consumers, the education rate, and the dependence of consumers on smartphones is leading to an increment in the amount of m-commerce usage (Meola, 2020; Smink, Van Reijmersdal, Van Noort, & Neijens, 2020). The number of online buyers crossed the two billion mark in 2021 the demand to create consistent (real-like) shopping experiences has increased (Clement, 2021). There is an agreement in businesses globally on the positive role (i.e., improving customer experience) of immersive technologies like AR in online interactions (Chen, Perry, Boardman, & Mccormick, 2021). These immersive technologies will change how buyers and sellers interact (Romano, Sands, & Pallant, 2021). AR is the application of digital objects in the real world (Azuma, 1997). In addition, it is predicted that the AR industry will increase from 11.4 billion to 571 billion US dollars by 2025 (Alimamy & Al-Imamy, 2021a). It is the best solution available to provide customers real like or near-to-real experience. Today businesses use more than one channel to interact and engage customers; the more interactive it is, the better outcome it brings (Wang, Ko, & Wang, 2022). The diffusion of 5G technologies is becoming a catalyst in the inculcation of immersive technologies in the e-commerce ecosystem (Baroroh, Chu, & Wang, 2020; Rejeb, Rejeb, & Keogh, 2021). AR connects users (customers) with the natural world and enriches their experience. Therefore, it has already been used across diverse fields and industries, including manufacturing (Bottani & Vignali, 2019; Sahu, Young, & Rai, 2021), healthcare (Ferrari, Klinker, &

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Cutolo, 2019), gaming (Davis, 2020), retail (Mclean & Wilson, 2019), beauty product industry (Wang et al., 2022), garment industry (Hernández & Ruiz, 2021), tourism (Andrijana Kos & Bruno, 2021), education (Garzón, Pavón, & Baldiris, 2019), defense (Kupchyn, Dykhanovskyi, & Kolotukhin, 2020), restaurant industry (Batat, 2021) automobile (Sung, 2021), and luxury brands (Javornik et al., 2021). This study investigated consumer behavior through the Wanna Kicks AR application used for the customers of the footwear industry. The projected value of the global footwear market in 2022 was 381.9 billion dollars. It is expected to increase considerably in the coming years, reaching around 508 billion US dollars by 2027 (Smith, 2022). In Pakistan, only in 2023, the footwear industry is anticipated to generate 174.70 million dollars in revenue (Statista, 2022). Thus, investigating the footwear industry is essential for academicians and practitioners. By incorporating AR, marketing can become more effective (Hilken, De Ruyter, Chylinski, Mahr, & Keeling, 2017). In other words, these AR experiences and interactions facilitate customers to comprehend the market offerings in an enriched and better way. However, personal information leakages, misuse of data, hacking, cyber-attacks, and the ability of modern apps and technologies to breach consumer privacy and extract their information have sensitized online customers to their privacy (Harborth & Pape, 2021). One-third of customers in research raise their information privacy concerns related to AR technology usage (Lammerding, Hilken, Mahr, & Heller, 2021). Therefore, despite its benefits, AR adoption by consumers is slow, which does not correspond to the inferred potential of this immersive technology (Schein & Rauschnabel, 2021). Thus, it is essential to understand AR utility and ARIPC in online shopping to fasten its steady growth. S-O-R theory is the basis for this research. The study's stimuli will be composed of components of AR experience quality. These stimulus components will result in the organism factor of the S-O-R model, which includes ARIPC, and customer perceived value, while behavioral intentions are the framework's response component.

Even though experiences have received much attention, controlling and creating experiences remain complicated tasks (Cetin & Dincer, 2014). Therefore, this research intends to substantiate how the quality of an AR experience affects customers' online buying behavior by employing an AR experience-induced environment with customer ARIPC and perceived value as mediators. Furthermore, this research will examine the serial mediation of ARPIC and the perceived value between the quality of AR experience and behavioral intentions. The outcomes of this study contribute to the increasing body of knowledge on consumer behavior literature employing marketing technologies and provide online businesses with valuable insights. Additionally, this research encourages AR in marketing and provides practitioners working on digital transformation implementation and marketing strategies with practical wisdom. In other words, marketers may employ AR to provide customers with a tailored, improved, and engaging online experience. In addition, the proposed study may help devise strategies for attracting and sustaining customers by encouraging them to utilize AR applications. Furthermore, based on the findings of this study, AR developers will improve and concentrate on the components of the AR experience that provide the most vital consumer perceptions and desirable behavior.

LITERATURE REVIEW

Quality of AR Experience

This study defined the quality of customer experience as presence, authenticity, and perceived interactivity (Alimamy & Al-Imamy, 2021). A user's sense of being present in a specific environment or space is the presence (Sheridan, 1992; Witmer & Singer, 1998). Park and Yoo (2020) defined interactivity as "a psychological condition experienced by a user throughout the interaction process." Additionally, authenticity refers to something that is not thought of as a replica or imitation (Grayson & Martinec, 2004). Experience is not a recent concept; however, it is a fundamental aspect of the nature of human beings. Several disciplines, including anthropology, psychology, tourism, and philosophy, have studied experiences (Abrahams, 1986; Cohen, 1979; Csikszentmihalyi, 1990; Maslow, 1964). Experiences impact businesses as a helpful instrument for competitive advantage and differentiation (Cetin & Dincer, 2014). Moreover, the literature on AR's effects on customer experiences has focused on mobile retail and internet shopping (Batat, 2021). This study extends the model due to limited investigation and inclusion of ARIPC explaining the steady growth of AR.

The definition of information privacy is "the individual's capacity (i.e., ability) to regulate the information about themselves directly" (Stone, Gueutal, Gardner, & Mcclure, 1983, p. 460). AR applications frequently modify and scan the user, their surroundings, or the individuals in these settings. Therefore, AR has the potential to trigger this

control-oriented concern of privacy regarding personal information of oneself, one's environment, or bystanders (Lammerding, Hilken, Mahr, & Heller, 2021). Receiving the advantages of contemporary technology without surrendering information privacy is unlikely in today's digitally linked world. The dilemma of "personalization/privacy" is referred to in the existing literature (Aguirre, Mahr, Grewal, De Ruyter, & Wetzels, 2015). These problems arise from the intrinsic conflict between AR's dependency on private data and users worried about privacy who do not feel they have control over their data when using AR. Furthermore, emerging AR privacy concerns are grounded in user experiences (Lebeck, Ruth, Kohno, & Roesner, 2018).

By integrating their abilities and expertise, customers are expected to create value in today's market (Saunila, Ukko, & Rantala, 2018). The customer experience quality becomes crucial when developing solutions that consumers may utilize to participate in co-creation since it enables them to comprehend the perceived value better. Experiences are different offerings, like services and goods, affecting how consumers perceive value. Experiences, therefore, offer customers a distinct value that is hard for the competition to replicate and substantially impact their behavior (Cetin & Dincer, 2014). In other words, sustainable offers like commodities, goods, or services must also be complemented with experiences (Coelho, Bairrada, & De Matos Coelho, 2020). Previous studies consistently indicate that the offering's quality determines a customer's perceived value (Oriade & Schofield, 2019). For instance, Pandža Bajs (2015) found, similar to Habibi and Rasoolimanesh (2021), that there is a strong association between the experience, perceived value, and the behavior regarding the destination they will recommend. Customer service quality is usually coupled with assessing the external characteristics of a good or service. However, customer experience quality is linked to a subjective, perceived, inner evaluation of an experience (Alimamy & Al-Imamy, 2021a; Otto & Ritchie, 1996). Furthermore, customers with positive experiences with a retailer are likelier to have positive behavioral intentions (Duarte, Silva, & Ferreira, 2018; Narayandas, 1998).

Moreover, immersion in an endeavor can benefit individuals by creating memorable experiences (Fu, Lin, Wang, & Sun, 2021). However, inconsistent results have been found about the impact of digital technologies on the customer experience, according to studies that looked at the adoption and usage of these technologies (Batat, 2021). The associations between the quality of experience and perceived value are still inconsistent (Kusumawati & Rahayu, 2020; Moon & Han, 2019). Similarly, experience has inconsistent findings with behavioral intentions (Shahijan, Rezaei, & Amin, 2018). Therefore, the quality of AR experience as external stimuli can lead to organism ARIPC and customer perceived value. The following hypothesis was formulated from the discussion above.

H1: Quality of AR experience has a negative influence on ARIPC.

H2: Quality of AR experience has a positive influence on perceived value.

H3: Quality of AR experience has a positive effect on behavioral intentions.

Augmented Reality Information Privacy Concern (ARIPC)

According to H. Wang, Lee, and Wang (1998), the definition of "privacy" is "the right to be left alone." The word implies autonomy, confidentiality, and solitude. People naturally want to keep themselves or data about themselves private and only selectively provide personal information (Grace, 2013; Nguyen, 2021). A "feeling of anxiety over one's privacy" might be described as a privacy issue from a personal and consumer standpoint (Lanier Jr & Saini, 2008). Information that is fundamentally distinctive or sensitive to the individual or organization may be considered private. Due to the significance of privacy, it has become a fundamental principle of privacy law or, in certain circumstances, countries' constitutions (Smith, Dinev, & Xu, 2011). No one should be exposed to illegal privacy infiltration by people, governments, or organizations. The emergence of the internet and the subsequent growth in e-commerce have increased the need for sensitive personal data, raising concerns about personal information and privacy (Bélanger & Crossler, 2011). According to Malhotra, Kim, and Agarwal (2004), internet user privacy is the safeguarding of personal data when using the internet, while "invasion of privacy" is the unapproved harvesting, disclosing, or other usage of personal information for online activities.

According to Dinev, Hart, and Mullen (2008), users' privacy concerns are related to their perception of the necessity of government monitoring, influencing their willingness (behavior) to provide personal information while transacting online. Few studies suggest a significant relationship between privacy concerns and perceived value, including in retail marketing (El-Haddadeh, Weerakkody, Osmani, Thakker, & Kapoor, 2019; Lin, Yeh, & Yu, 2016; Lin, Do, Nguyen, & Cheng, 2021; Pizzi & Scarpi, 2020). Furthermore, privacy concern predicts behavior (Maduku, 2020). Similar to a recent study by Jozani, Ayaburi, Ko, and Choo (2020), privacy concerns significantly

impact customer behavior. According to the extant literature, privacy concerns negatively impact customer behavior in a range of areas, such as RFID-based u-commerce (Lee, Park, Yoon, & Yeon, 2007), mobile payments (Sinha, Majra, Hutchins, & Saxena, 2018), ubiquitous commerce (Sheng, Nah, & Siau, 2008), e-recruitment technology (Tong, 2009), electronic health (Angst & Agarwal, 2009; Misra, Kumar, & Munnangi, 2019), and social media (Bright, Lim, & Logan, 2021; Tan, Qin, Kim, & Hsu, 2012). It has been discovered that users' behavioral intentions are directly impacted by privacy concerns (Fogel & Nehmad, 2009). Users' social awareness and online literacy may influence their privacy concerns, further influencing their purpose (Dinev & Hart, 2005). Son and Kim (2008) found that users' privacy responses, such as information-providing behavior, are influenced by information privacy concerns. Customers are eager to provide businesses with their personal information when the advantages of data-intensive apps appear to overshadow the risks (Smith, Dinev, & Xu, 2011b). If the advantages outweigh the disadvantages, customers are eager to engage in a social transaction by disclosing personal information (Martin & Murphy, 2017). Customers respond differently to their data privacy concerns because of the benefits of using AR, such as the simplicity with which customers can creatively engage (Jessen et al., 2020) or customize (Carrozzi et al., 2019) with market offerings such as products to enable better judgment (Hilken, Keeling, De Ruyter, Mahr, & Chylinski, 2020), outweigh the varying risks and costs of providing personal information. Furthermore, emerging AR privacy concerns are grounded in user experiences (Lebeck et al., 2018). Thus, this study hypothesized the organism and organism-response relationship of theory as the following

H4: ARIPC has a negative influence on perceived value.

H5: ARIPC has a negative influence on behavioral intention.

Customer Perceived Value

Customer perceived value is "the complete evaluation of the utility of a product (or service) by the customer based on perceptions of what is given and what is received" (Zeithaml, 1988). Moreover, according to Grönroos (1997), the advantage to the consumer in terms of the immediate solution and any extra sacrificial services (in the context of the cost and price of the relationship) is known as perceived value. Additionally, Oliver Richard (1997) defined perceived value as "a comparative judgment between what has been received (e.g., the result) and acquisition costs (e.g., financial cost, psychological cost, and effort)." Customers perceive value from their shopping experience (Mathwick, Malhotra, & Rigdon, 2002). A person expects equality between the benefits they receive and their financial or non-financial sacrifices as the source of perceived value (Suhartanto et al., 2021).

Studies show that perceived value strongly predicts behavioral intentions (Cronin, Brady, & Hult, 2000; Sweeney & Soutar, 2001). Moreover, in online shopping, many studies find a consistent positive relationship between perceived value and behavioral intentions (Che-Hui, Wen, & Chung-Cheng, 2011; Chen, Tsai, & Hsieh, 2017; Lee, Eze, & Ndubisi, 2011). Thus, it is hypothesized in this study that perceived value as an organism directly impacts response, that is, online customers' behavioral intentions when using ARto shop.

H6: Customer perceived value has a positive influence on behavioral intention.

Behavioral Intentions

A person's behavioral intentions are "what they intend to do" (O'keefe, 2002, p. 101). In Mehrabian and Russell (1974) S-O-R model, customer behavioral responses are referred to as approach-avoidance behaviors, representing the consumer's intentions to approach or avoid a given setting. The customer's behavioral response to the consuming environment may be categorized into approach and avoidance. Approach behavior is approaching a specific environment, staying, exploring, interacting, and identifying in it, forming a favorable opinion of the environment, and intending to return. Avoidance behavior is the exact opposite. This research examined the former approach. Moreover, positive behavioral intentions include the intention to revisit, spread positive word of mouth, and purchase (Yoo & Kim, 2014). Many studies show that behavioral intentions are predicted by experience, privacy concerns, and perceived value (Bélanger & Crossler, 2011; Chen, 2019; Dinev & Hart, 2005; Jozani et al., 2020; Lee, Lee, & Kim, 2016; Mainardes, Gomes, Marchiori, Correa, & Guss, 2019; Sung, 2021). It has been determined that intention is an essential predictor of actual behavior (An, Harada, & Sato, 2020; Fishbein & Ajzen, 2011). The following mediation hypotheses are formulated after the literature review.

H7: ARIPC mediates the relationship between the quality of AR experience and behavioral intention.

H8: Customer Perceived Value mediates the relationship between the quality of AR experience and behavioral

intention.

H9: ARIPC mediates the relationship between the quality of AR experience and customer perceived value.

H10: Customer perceived value mediates the relationship between the ARIPC and behavioral intention.

H11: ARIPC and customer perceived value have serial mediation between the relationship of quality of AR experience and behavioral intention.

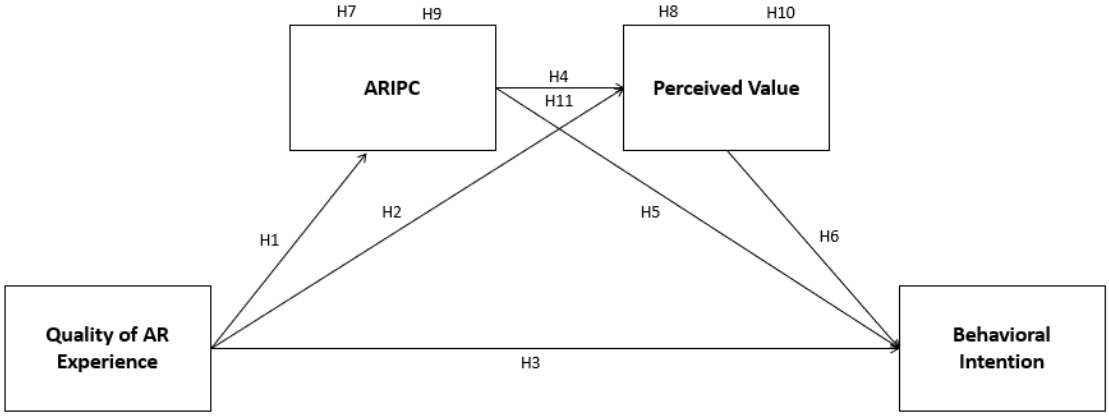

Figure 1: Research framework

METHODOLOGY

This study used variables from existing literature to examine a framework in the context of online business. A survey method was used to acquire data in this study. Purposive sampling, a non-probability sampling technique, was employed (De Leon, Atienza, & Susilo, 2020). The questionnaire was developed by adopting scales from the literature. It comprises 20 items to assess the construct of the quality of the AR experience, which includes the dimensions of presence (Witmer & Singer, 1998), authenticity (Kolar & Zabkar, 2010; Ramkissoon & Uysal, 2011; Xie, Wu, & Hsieh, 2012), and perceived interactivity (Park & Yoo, 2020). Ten items made up the ARIPC scale (Lammerding, Hilken, Mahr, Heller, & Technology, 2021). Customer perceived value (Cronın, Brady, & Hult, 2000) and behavioral intentions (Yoo & Kim, 2014) were measured using three items each. The 7-point Likert scale measured all variables (1 strongly disagreed and seven strongly agree). Three consumer behavior academics examined the instructions and questions of the questionnaire before pretesting and data collection to ensure it was appropriate for the investigation. While modern technologies (like AR) that offer a rich and distinctive customer experience have garnered relatively little attention, the online shopping experience has attracted much interest in consumer behavior research. Italian, Chinese, British, and Pakistani online shoppers consented to participate in this study. From March to November 2022, the research assistants used a self-administered questionnaire to collect data directly from online customers. Purposive sampling is used in this study due to challenges in defining the sample frame. Self-administered questionnaires were given to online shoppers who were ready to participate after at least ten minutes of AR-induced online shopping experience. According to Hoelter (1983), a statistical power of at least 200 observations is required for an SEM study. In this study, 1458 of the 1620 interested internet buyers responded to a fully completed and usable questionnaire. As partial least square (PLS) can evaluate the structural models' coefficient paths, it was used in the data analysis and variance-based structural equation modeling (Henseler et al., 2014). Using this method, the researcher can also analyze data with an abnormal distribution (Le-Anh, To, & Van, 2022; Suhartanto, Brien, Primiana, Wibisono, & Triyuni, 2020). Confirmatory factor analysis was used to assess the constructs' validity and reliability before testing the model and hypotheses.

RESULTS

The summary of the respondents' demographics, shown in Table 1, is the first part of the analysis. According to Table 1, respondents under 25 years old and our customers make up the majority in this study. These findings imply that, in contrast to other age groups, AR-induced online shopping tends to draw more youthful customers who are well-skilled in using new, modern, and distinctive technologies.

Table 1: Descriptive analysis

Demographics Classification	Frequency	Percentage
Gender Profile		
Female	664	45.6
Male	793	54.4
Age Profile		
10-25	1036	71.1
26-40	334	22.9
41-55	64	4.4
56-70	20	1.4
Above 70	3	0.2
Education Profile		
High School	53	3.6
Intermediate	190	13
Bachelor	880	60.4
Master	227	15.6
MS and Above	107	7.3
Work Profile		
Employee (Public)	100	6.9
Employee (Private)	277	19
Entrepreneur	135	9.3
Student	856	58.8
Other	89	6.1
Income Profile		
Below 20,000	685	47
20,000 - 40,000	257	17.6
40,001 - 60,000	240	16.5
60,001 - 80,000	143	9.8
Above 80,000	132	9.1
Average Online Spending Profile		
Below 5000	658	45.2
5000 - 10000	395	27.1
10001 - 15000	148	10.2
15001 - 20000	100	6.9
Above 20000	156	10.7

Measurement Model

The proposed framework was examined using a two-stage process. The measurement model, formally known as the outer model, is the initial assessment stage, which looks at outer loading. Composite Reliability (CR), Cronbach's Alpha, and Average Variance Extracted (AVE) is used to evaluate the reliability and validity of the constructs. Table 2 shows that the construct reliability and validity criteria are met because all indicator loading factors are more significant than 0.6, and CR values are greater than 0.7. In this study, AVE reflects convergent validity as the values are more significant than 0.5 (Suhartanto et al., 2020). All of Cronbach's Alpha values are higher than the required level of 0.7; therefore, the reliability criteria are also met (Hair, Anderson, Babin, & Black, 2010).

Table 2: Construct reliability indicators

Construct	Cronbach's Alpha	Composite Reliability (CR)	The Average Variance Extracted (AVE)
ARIPC	0.863	0.866	0.510
Behavioral Intention	0.774	0.775	0.688
Customer Perceived Value	0.782	0.782	0.696
Quality of AR Experience	0.930	0.930	0.505

The degree to which one construct differs from another is called discriminant validity. This study evaluated the discriminant validity using the Heterotrait–Monotrait (HTMT) criteria. The Heterotrait-Monotrait Ratio (HTMT), a recent technique suggested by Henseler, Ringle, and Sarstedt (2015), is employed in this study to examine the discriminant validity of the components. As all HTMT values are less than 0.9, Table 3 satisfies the discriminant validity criterion.

Table 3: Heterotrait-monotrait ratio

	ARIPC	Behavioral Intention	Customer Perceived Value
ARIPC			
Behavioral Intention	0.661		
Customer Perceived Value	0.601	0.760	
Quality of AR Experience	0.512	0.648	0.732

Structural Model

In the second data analysis stage, the structural model was assessed in this phase. To establish the significance of the values and coefficient paths, 10,000 bootstrapping iterations were employed (Basco, Hair, Ringle, & Sarstedt, 2022). The model's validity was evaluated using R2 and the geometric mean of average communality. A result of 0.469 for the model Goodness Of Fit (GOF) indicates that the model fit is satisfactory.

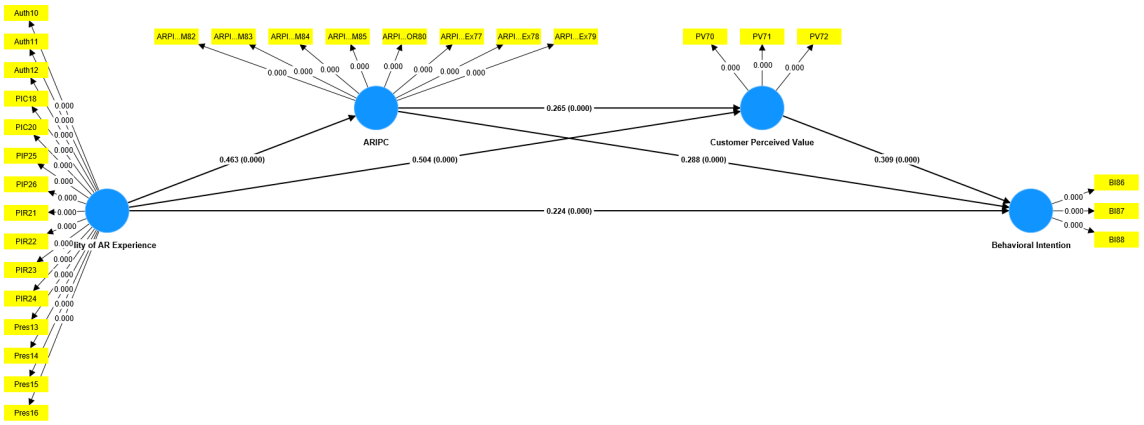

Figure 2: Structural model

According to $R2$ values, quality of AR experience, ARIPC, and perceived value account for 45% of the variation in behavioral intention. The values suggest that the independent variables' effect on behavioral intention is moderate (Chin, 1998). The approximation fit indices were also evaluated using a Standard Root Mean Square Residual (SRMR) and a Normal Fit Index (NFI). NFI has a value of 0.854, which is slightly below the desired level > 0.90, and SRMR has a value of 0.049, which meets the condition (i.e., SRMR < 0.08) (Hair Jr, Howard, & Nitzl, 2020; Sarstedt, Ringle, Henseler, & Hair, 2014). In general, the results of this data analysis are pretty robust.

As hypothesized, the findings demonstrate that the quality of AR experience has a substantial effect on ARIPC (β = 0.463, p < .05), customer perceived value (β = 0.504, p < .05), and behavioral intentions (β = 0.224, p < .05). Moreover, ARIPC has a significant effect on customer perceived value (β = 0.265, p < .05), and behavioral intentions (β = 0.288, p < .05). In addition, perceived value has a strong association with behavioral intentions (β =

0.309, $p < .05$). Therefore, all direct relationships (H1, H2, H3, H4, H5, and H6) in the framework (Figure 2) are supported.

In this study, Variation Accounted for (VAF) is used to investigate the mediation hypotheses (H7, H8, H9, and H10) (Hair, 2013) and serial mediation (H11) (Meher, Nayak, Mishra, & Patel, 2022; Mehta, Singh, Mittal, & Singla, 2021). The findings of mediation analyses show significant (i.e., $p < .05$) total indirect and specific indirect effects. The VAF values and meditation are illustrated in Table 4.

Table 4: Mediation analyses

Hypotheses	Direct Paths	Indirect Paths	VAF	Mediation	Decision
H7	0.224	0.133	73%	Partial	Supported
H8	0.224	0.155	85%	Full	Supported
H9	0.224	0.123	37%	Partial	Supported
H10	0.288	0.082	37%	Partial	Supported
H11	0.504	0.038	21%	Partial	Supported

DISCUSSION

The findings of this study show that using quality AR of experience in shopping overcomes customers' privacy concerns. That is consistent with the study on which mobile applications are unique to m-commerce and provide more privacy options due to their distinctive properties (Molinillo, Navarro-García, Anaya-Sánchez, & Japutra, 2020). These studies support the result of H1. Similarly, the analysis shows consistent findings with the research where in-store presentation quality and other exogenous constructs related to the purchasing experience affected perceived value (Aurier & De Lanauze, 2011). Additionally, Moon and Han (2019) suggested that the tourist experience predicts one's perceived value. Furthermore, Fu et al. (2021) results indicate that the boat exhibitions experience positively impacts the processes of perceived value. Thus, the second hypothesis, H2, has support from the previous studies. In the restaurant sector, AR experience is positively associated with behavioral intentions (Batat, 2021). This study shows evidence to support the H3 from the literature. Few studies suggest a significant association between privacy concerns and perceived value, including retail marketing (El-Haddadeh et al., 2019; Lin et al., 2016; Lin et al., 2021; Pizzi & Scarpi, 2020), consistent to H4. However, there is no statistically significant effect of student privacy concerns on their perceived value in higher education institutions (Kilburn, Kilburn, & Cates, 2014). H5 shows similar results as privacy concerns predict behavior (e.g., voters' resistance regarding mobile marketing in political campaigns or social media) (Bright et al., 2021; Hinds, Williams, & Joinson, 2020). Similar to the findings of H6, perceived value positively impacted behavioral intention (i.e., loyalty) (Kilburn et al., 2014; Sato, Gipson, Todd, & Harada, 2018). For instance, organic food is more likely to be repurchased by consumers who see more value in it or have a favorable perception of it (De Toni, Eberle, Larentis, & Milan, 2018). In other words, privacy concerns influence customer behavior. Experience and customer perceived value positively impacted behavioral intentions (like loyalty, repurchase, positive word of mouth, and revisit), supporting the findings of H2, H6, and H8 in this research (Guerra-Tamez, Dávila-Aguirre, Barragán Codina, & Guerra Rodríguez, 2021). Moreover, information privacy concerns indirectly affect the customer's behavioral intention in location-based services (Zhou, 2011) like H7 and H9. However, extant literature aimed mainly at the direct impact of privacy concerns and behavioral intention shows insignificant impacts (Tan et al., 2012; Von Stetten, Wild, & Chrennikow, 2011). Moreover, consistent with H8, perceived value mediates the relationship between the quality of experience and the behavioral response of customers of heritage tourism (González-Rodríguez, Domínguez-Quintero, & Paddison, 2020). Few studies show evidence to support H10 perceived value in a framework with behavioral intention as a dependent variable (Molinillo, Liébana-Cabanillas, Anaya-Sánchez, & Aguilar-Illescas, 2021) and quality of experience as a predictor variable (Oriade & Schofield, 2019). Moreover, privacy concerns and perceived value have already been investigated together in a framework as mediators; however, as parallel. The H11 also contributes to the literature of online shopping by investigating both in a serial mediation (Yang, 2022). Overall, the discussion shows similar findings in the literature's direct and indirect (mediation) relationships of the framework.

CONCLUSION

Based on the experience-induced research conducted, it can be concluded that the quality of AR experience, ARIPC, and perceived value significantly affect behavioral intentions. Moreover, the simple and serial mediations of privacy concern and perceived value exist between quality AR of experience and behavioral intentions of Pakistani online shoppers, particularly in the footwear industry. The results demonstrate that improved quality of AR experience leads to a decrease in AR information privacy concerns and an increase in perceived value, ultimately resulting in higher behavioral intentions of online customers towards the AR application. These findings suggest that developers and companies should focus on enhancing the quality of AR experiences to increase user engagement, perception, and adoption in online shopping.

IMPLICATIONS

The study findings help develop a suitable strategy to encourage more online buyers to adopt augmented reality. This research has implications for creating, using, and understanding AR in managing and marketing online shopping experiences from customers' perspective leading to developing their positive behavioral intentions. The resources should be allocated more towards increasing the quality of customer experience using immersive technologies like AR to provide customers benefits of online shopping with traditional shopping-like experiences. Furthermore, to create revisit, positive WOM, and repurchase behavior, managers should deliver a safe online shopping experience. To provide such real and interactive experiences through AR, managers and employees must understand this technology's importance. Thus, decision-makers for AR applications or immersive technology may find the findings pertinent to better comprehend users' perceptions in the context of online shopping to use and develop an effective and efficient policy for positive behavioral responses.

This research shows that the quality of the AR experience significantly explains behavioral intentions in online shopping. Understanding the significance of customer-perceived value and ARIPC in the framework is also essential. In addition, this research will broaden the quality of experience literature in the footwear industry and AR technology.

LIMITATIONS AND FUTURE RESEARCH

The obtained results comprised experience of one AR application (i.e., Wanna Kicks) from the customers of the global footwear market only. Generalizing this study to other AR applications in different industries may provide valuable results. This study is cross-sectional. Future researchers should conduct a longitudinal study to validate the findings. Moreover, researchers may apply a qualitative method to collect data and increase the robustness of this framework. Future researchers can base this framework on a different theory, like mere exposure theory or situated cognition theory. Furthermore, more mediating variables like mental imagery and self-transformative consumption vision can be investigated between the quality of AR experience and behavioral intentions.

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