Enhancing Purchase Intention in Virtual Reality: The Interplay of Affective Image and Source Credibility

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ARTICLE INFO	ABSTRACT

Virtual reality (VR) has grown as a radical tool that influences customer perceptions and decision-making in the rapidly changing digitalized economy. This study fills knowledge gaps how informational elements work together to stimulus decision-making in immersive settings by analyzing the influence of affective image and source credibility on customer's purchasing intention (IP) through VR. The study proposed two main hypotheses grounded on the elaboration likelihood model. A quantitative survey method is used, leveraging survey data from 533 individuals who have the intention to purchase through VR. Both hypotheses established substantial support from structural equation modelling (SEM), which showed that source credibility and affective image had a significant impact on purchase intention. The outcomes are added by expanding body of research on VR in marketing and consumer behavior by shedding light on how immersive technologies influence customer purchase intention. For marketers the research also renders practical implications, VR content creators, and businesses seeking to boost customer purchase intention through immersive digital technology.

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Introduction

The technological innovation known as VR has lately gained a lot of popularity when it comes to advertising (Hinsch, Felix, & Rauschnabel, 2020; Van Kerrebroeck, Brengman, & Willems, 2017). VR enables individuals to relate in a simulated store setting that is a three-dimensional through an interactional device (Pizzi, Scarpi, Pichierri, & Vannucci, 2019). With the increase of refined (motion tracking) systems, VR has been certified for retail experiences through virtual immersive settings. An advancement of VR is that retail space has not been constrained by physical boundaries; for retail customers, it provides a platform for perceiving a simulated, virtual touch without having to be present actually (Lombart et al., 2019). VR capabilities give users the ability

to interact virtually with objects in an environment that alters how goods are seen, and successively, their valued insight into that merchandise (Alzayat & Lee, 2021). When populations have recovered from the COVID-19 epidemic, an evolving prospect for retailing based VR has become more prevalent. As physical and social withdrawal and distancing practices grew as a cultural norm, individuals struggle to visit retail stores and hypothetically search for merchandise. In the existing situations, there possibly is a suitable time to search how VR can simulate an improved intention to purchase that imitates a retail physical environment through virtual touch (Alzayat & Lee, 2021).

Due to the recent pandemic COVID-19, equally, customers and retailers, regarding virtual shopping requirements, are debatably more noticeable than earlier. Worldwide, governments locked down and restricted activities and movements to access the market, and varying consumer feelings towards the possible safety and health risks of using physical stores, made trading online an indispensable profits stream for numerous retailers. VR depicts the usage of a (3D) three-dimensional environment that is computer generated known as a simulated environment. Customers can use a touch screen or a computer mouse to interact with and traverse virtual environments. Such as, customers can explore and move around the virtual destination, to select and organize articles through interactive and navigation parts. As VR facilitates customers to interact and navigate a virtual environment (Lee, Lee, Jeong, & Oh, 2020).

Various product types (utilitarian vs. hedonic) (Kempf, 1999), tasks related to shopping (information searching vs. overall experience), as well as social aspects (individual vs. group shoppers), all come into action (Sommer, Wynes, & Brinkley, 1992), may affect effectiveness in the context of VR shopping, but these elements have not yet been adequately discussed in the literature (Xi & Hamari, 2021). VR has been used by several market leaders to boost consumer value (Kannan, 2017; Thaichon & Quach, 2015). For instance, Buyplus1, a new VR shopping mall, has been introduced by the Alibaba Group, which controls the largest online market share in China. The company believes that by allowing customers to shop through VR from the comfort of their own homes, purchase intention will rise. Also, Amazon is experimenting with VR kiosks as a fresh way to engage customers (Horwitz, 2018). Based on its ability to alter the retail experience and distribution channels, VR shopping malls in South Korea have a promising future (Han, An, Han, & Lee, 2020). Clothing companies like Gucci and Nike design large product displays, sometimes showcasing entire outfits on a mannequin depicted in a realistic or theme-appropriate scenario. As a result, the demand for VR technology has grown as a result of technological advancements, and they facilitate online transactions (Papagiannis, 2020).

Pakistan has the ability to upgrade its e-commerce platform's web 2.0 and 3.0 applications. Pakistani clothing companies are aggressively using web 2.0 technology in their online storefronts in order to interact and engage with customers. Significant advancement is required for more expansive and dynamic consumer interaction, which would help Pakistan's e-commerce sector to grow. Web 3.0 technologies that include AI and semantics may more accurately assess demand and options by using deductive reasoning (Idrees, Vignali, & Gill, 2020).

In developed economies, noteworthy social and economic benefits have been provided by ecommerce amazing success conversely, whereas in developing economies, the scene is relatively dissimilar. Numerous economic challenges have stuck with the development of e-commerce. Regarding this, (Uwemi, Khan, & Fournier-Bonilla, 2016) pointed out that customers in developed

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economies are familiarized using the Internet and became advanced with the help of e-commerce, shifting their lifestyles. On the contrary, customers in developing economies are using face-to-face transactions, and electronic processes are not trustworthy for them, and cannot bear the involved risk. The above-mentioned situation reveals the necessity to research the critical aspects that lead customers for social and economic benefits that rich economies currently enjoy, developing economies must espouse e-commerce (Peña-García, Gil-Saura, Rodríguez-Orejuela, & Siqueira-Junior, 2020).

This study deals with ELM that is a dual-process explanation of attitudes that persuade people (Cacioppo & Petty, 1984). Relying on the sort of information they get and their amount of cognitive activity, an individual selects pertinent information in which attitudes are established and modified (Cyr, Head, Lim, & Stibe, 2018). The ELM is designed to provide a framework for organizing influence that may be modified depending on several elements, including origin, message, beneficiary, and context (Cacioppo & Petty, 1984).

The ELM comprises central and peripheral routes. The peripheral route includes two factors: affective image and source credibility. Understanding different facets of consumer attitudes may help marketers to predict product sales because the attitudes of customers affect their purchasing intentions. Three-dimensional adverts have been shown in several recent marketing studies. There aren't many studies that have employed ELM to affect VR and customer attitude (Jayawardena, Thaichon, Quach, Razzaq, & Behl, 2023). The research suggests that intention can be the most important predictor of any kind of action, the main indicator of online purchase behavior from a seller in the present research will be purchase intention (Fishbein & Ajzen, 1977).

Shopping-related studies have been assumed with physically simulated retail outlet and virtual stores. However, current advances in VR motion-tracked presents a choice of novel opportunities for studies using an immersive walk around a virtually simulated store. Up till now, there is scarce information available on the validity of purchaser behavior regarding such virtual immersive environments. Immersive virtual simulated retails are thus cost-effective and substitute new approaches for determining consumer behavior. Such stores deliver noteworthy possibilities for innovative investigational projects in consumer research, in addition to possibilities for the forthcoming usage of a digital shopping medium (Schnack, Wright, & Holdershaw, 2020). Although ELM is significant in terms of how well it explains consumer behavior, there haven't been many efforts to integrate new technology into its theoretical framework (Shahab, Ghazali, & Mohtar, 2021). This research finds and connects the gaps between consumer behavior studies and emerging technologies like VR.

Immersive technology must be effectively integrated in relation to the full customer journey to comprehend its worth and the function that will bring to the occurrence as a whole, as many scholars have noticed in their work (Moorhouse, tom Dieck, & Jung, 2019; Rauschnabel, Felix, & Hinsch, 2019). Although implementation has usually been restricted to improving a single touchpoint, this has so far been mostly ignored in the industry based on digital technology (Tom Dieck & Han, 2022). Framework of the current research comprises of ELM-peripheral routes (affective image and source credibility) that influence intention to purchase through VR in an emerging economy. Modern VR technologies make it possible for researchers to quickly and precisely observe dynamic consumer processes, including looking for, assessing, and choosing in a realistic experimental scenario. The trade-off between experimental control is anticipated to be addressed by VR (Meißner, Pfeiffer, Pfeiffer, & Oppewal, 2019; Xi & Hamari, 2021).

Literature Review

In the current time period, technological advancements have meaningfully affected the form of consumption as the customer drive has shifted to embrace more association on digital technology that interfaces in physical retails. This change stances a major conceptual trial in considering if and how these technological variations influence intention and consumption (Malter, Holbrook, Kahn, Parker, & Lehmann, 2020). The present study follows peripheral route of ELM (affective image and source credibility) for hypotheses development.

Digital world and consumer behavior

When consumers were first exposed to the World Wide Web in 1989, its functionality was limited to passive data users—an interface that allowed people to store and use information but had nothing to do with it. Since then, online platforms have continued to evolve, eventually transforming the web into what it is today: a digital environment that millions of users rely on to communicate, collaborate, and design (Choudhury, 2014; Hadi, Melumad, & Park, 2024). Along with the arrival of digital conversions has completely changed to change the behavior of customers. The complexity of the interaction between retailers and consumers has greatly influenced the revolutionary development of customer expectations, profits and purchasing behavior, as they transcend an increasingly digitally advanced world.

In the twenty-first century, the digital world and digital space have permeated every aspect of our daily existence. Our social and civic lives, as well as our commerce and pleasure, have shifted into the digital sphere (Varga & Csiszarik-Kocsir, 2024). E-commerce, or digital shopping, relies heavily on smart devices and digital platforms. Instead of physical stores, consumers have convenient online shopping options and access to a vast range of choices and online information (Taneja, 2021). Consequently, it is essential for sellers to provide accurate and trustworthy information to customers to avoid misleading them in their purchasing decisions. When shopping online, customers have the benefits of comparing prices, viewing product features, and reading reviews to help them make informed decisions. Digital shopping platforms offer various tools and features, such as personalized recommendations, virtual fitting rooms, and secure payment options, to improve the overall shopping experience (Kedah, 2023). Businesses can gain valuable insights into consumer preferences through ongoing communication and feedback in the online space (Varga & Csiszarik-Kocsir, 2024).

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Virtual Reality

One of the technological mega-trends driving the digital era of every aspect of human life at the start of 2020 is VR (Lee et al., 2020). VR technology has been applied in numerous fields, included advertising, marketing and consumer behavior (Lombard & Snyder-Duch, 2001), product display and design (Kan, Duffy, & Su, 2001), entertainment (Stapleton, Hughes, Moshell, Micikevicius, & Altman, 2002), the construction industry (Whyte, 2003), and tourism (Guttentag, 2010). The shopping and retail industries are known to be among the most bright business applications of VR (Cowan & Ketron, 2019). VR represents the physical spaces and objects through high-definition digital images that permit users in a digital atmosphere to be immersed (Biocca, 1992). The illusion gives to human brain a physical presence, users can experience objects/places where they directly they were interacting with all objects (Dede, 2009). This is how a recent wave of studies has handled the real-life role known as a "psychological stage where virtual objects displayed in a 3D computer environment are assumed to be real objects in a sensory manner" (Algharabat & Dennis, 2010).

The advantages of VR are widely acknowledged (Pantano & Servidio, 2012). In settings such as e-commerce, V-commerce (i) offers more products than physical business. (ii) Potential integration of other communication tools, such as traditional advertising, online media, and EWOM. (iii) the ability to actually interact with the product, the ability to see it in a realistic way, and the ability to request personalized information that may affect customer decision. This is made possible by the vast possibilities of VR devices (Papagiannidis, See-To, & Bourlakis, 2014).

Technology's quick development and marketers' flawless application in product displays are changing global consumer buying habits (Raza, Wasim, & Ishaq, 2024). People have been rapidly transitioning to a "post-digital" world in recent decades, where traditional and digital marketing concepts are evolving. Experts and scholars have noted changes in the academic and marketing sectors (Nelson, Ham, & Ahn, 2017), including the rise of digital media, VR, and cutting-edge technological advancements (Dwivedi et al., 2021).

Elaboration Likelihood Model

The primary reason for ELM's continued use is the enormous variety of content that has been produced since 1981. More than 125 chapters and articles in the area of marketing and advertising have been written, and additional extensions and improvements have been made for ELM (Kruglanski & Thompson, 1999).

Being a noticeably popular, effective (Szczepanski, 2006), and useful framework, this model is mostly used for advertising and marketing related research while conducting attitudinal change that is expected to be practiced through externally generated persuasion. According to multiple scholars, ELM is the most well liked and frequently applied model in research on decision-making, consumer behavior, and social psychology (Cook, Moore, & Steel, 2004; Stephenson, Benoit, & Tschida, 2001; Teng, Khong, & Goh, 2014, 2015; Verweij, Senior, Domínguez D, & Turner, 2015). ELM therefore has the ability to close crucial research gaps in the marketing literature (Shahab et al., 2021).

Affective image represents sensitivity regarding a product. Assuming a depiction of an affective quality has been acknowledged to setting (Pratt & Russell, 1980). Pike and Ryan (2004) established that 4 semantic differential scales 1) sleepy–arousing, 2) unpleasant–pleasant, 3) gloomy–exciting, and 4) distressing–relaxing might be practical and applicable to explore the affective image factors. The level where the information is supposed to be a reliable way of

information sharing and to be trusted and offer an unbiased view regarding the merchandise is known as source credibility (Shan, 2016; Tan & Liew, 2020).

Theoretical Framework and Hypotheses Development

Established on review of the literature and theoretical background, a conceptual structure is designed to delineate the Elaboration Likelihood Model including the peripheral route (affective image and source credibility)
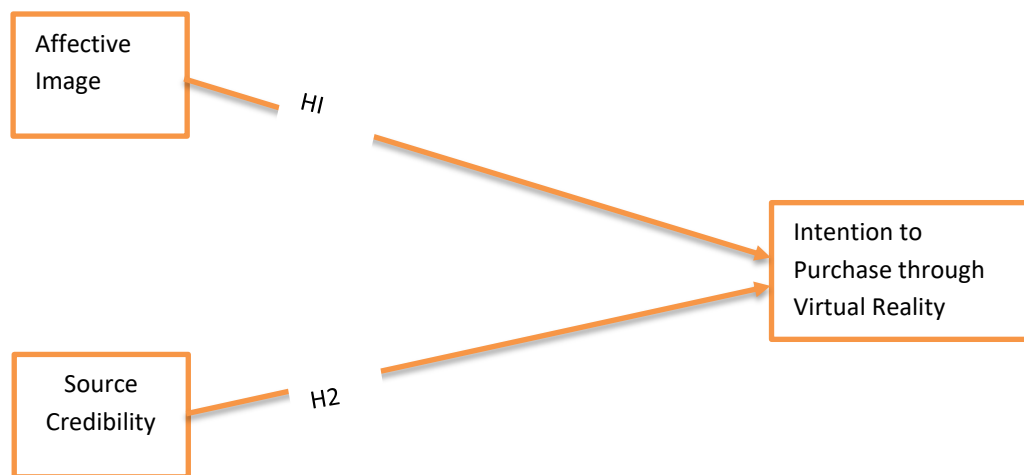

Figure 1: Proposed framework

Hypotheses Development

In advertising and marketing related research ELM is one of the extensively studied and used models, it comprises dual routes for persuasion purposes: 1) the central route, and 2) the peripheral route (Petty & Cacioppo, 2012). High levels of elaboration indicate that the core channel is being stimulated (persuasion is the result of careful consideration of reasons). However, when there is a low level of elaboration that means the peripheral route is stimulated whereas the peripheral route involves slight cognitive work (Bhattacherjee & Sanford, 2006). When there is a long-term shift in attitude, and it is more prophesy of future behavior as compared to the other route it is known as a central route. On the other hand, attitudes that are developed through the peripheral route that often lasts for a shorter amount of time and it is less likely to predict future behavior than the central route (Petty & Cacioppo, 1981).

A concept that consists of message trustworthiness and source expertise is known as source credibility. Expertise denotes the degree to which a presenter is supposed to be proficient in creating accurate statements (Tan & Liew, 2020). Fogg (2002) refers to perceived credibility that results from quick assessments of outward characteristics, such as a person's appearance, their clothing, or their hairstyle. Surface credibility is associated with the concept of media competence and is part of the broader model of source credibility. Users will practice superficial signals to apply heuristic judgements regarding the computer profile, sources, and message after reducing their cognitive capacities when judging a computer source (Tan & Liew, 2020). S. W. Wang, Kao, and Ngamsiriudom (2017) the conviction, attitude, and value systems of the audience are impacted by the discussed perceived expertise of product presenters and endorsers, which influences purchase intention. Previous studies have shown that the source credibility of endorsers has a

considerable impact on purchase intention (Pornpitakpan, 2004; S. W. Wang et al., 2017). Purchase intention should be influenced by the perceived source credibility of a virtual agent that acts as a product counsellor since individuals react to computers that emulate human-to-human community scripts (Beldad, Hegner, & Hoppen, 2016).

Therefore, the affective level of understanding images is attractive and raises more concerns for investigators. This refers to the classification of an affective image or commonly affective computing, which is rather a thought-provoking problem as emotions are subjective due to elusory and restrained connections with several complex graphical features. Eight emotional groups are included in affective images, fear, sadness, contentment, awe, anger amusement, disgust, and excitement (X. Wang, Jia, Yin, & Cai, 2013).

H$_1$: *Affective image has a noteworthy influence on IP through VR.*

Chen, Pan, and Guo (2016) appealed that conation or intention refers to an act established on a person's intellect, and constructs appears to be a vital idea for considering upcoming motivations and behavior. Following this, the endeavor to recognize behavioral intention will bring added involvement to the base of VR knowledge. Ajzen (1991) stated that behavioral intention is the propensity to engage in a particular behavior in future study. Because of Perugini and Bagozzi (2001), behavioral intention is a partial preparation including a few activities of responsibilities that are projected by pre-intention variables like conative or affective phases of the image (White, 2014).

H$_2$: *Source credibility has a noteworthy influence on IP through VR.*

Methodology

Data collection

The study employed an online survey methodology to gather primary data. The questionnaire, structured into three sections, was distributed via Google Forms and circulated through WhatsApp and email to ensure broad participation. The first section provided a cover statement outlining the research objectives, ensuring participant confidentiality, and clarifying key conceptual frameworks. The second section captured demographic details, including age, gender, education level, and monthly income. The third section comprised multi-item scales to measure the variables of interest, aligned with the study's theoretical framework. Participants were primarily corporate students from business and management programs, selected due to their relevance as future decision-makers in organizational contexts (Ahmed, Chung, & Eichenseher, 2003). This sampling strategy ensured alignment with the research focus on leadership and business practices. The digital distribution method facilitated efficient data collection while adhering to ethical standards, yielding a robust dataset for analysis

Sample size

Data were collected through convenience sampling from 600 students enrolled at public universities in Pakistan. Over a four-week period, 574 responses were received, with 41 excluded due to incompleteness or inconsistencies, yielding 533 valid responses (88.8% validity rate). Following J. Hair, Anderson, Tatham, and Black (1998) guidelines for structural equation modeling, the sample size (533) exceeded the recommended threshold of 5–10 responses per construct item, with 49 items analyzed. Control variables included age, gender, education, and income level, consistent with prior research (Hudson, Matson-Barkat, Pallamin, & Jegou, 2019) .

Respondents comprised 57.4% males and 42.6% females. A majority (91.9%) were aged 16–25, while 2.6% and 2.2% fell within the 36–45 and 46–55 age brackets, respectively. Full demographic details are presented in TABLE 1.

Table I: Descriptive Statistics

N = 533	Classification	Number	Percentage	Cumulative Percentage
Gender	Male	227	42.6	42.6
	Female	306	57.4	100.0
	Total	*533*	*100.0*	
Marital Status	Married	40	7.5	7.5
	Unmarried	467	87.6	95.1
	Divorced	3	0.6	95.7
	Widow	2	0.4	96.1
	Others	21	3.9	100.0
	Total	*533*	*100.0*	
Age	Below 16	2	0.4	0.4
	16-25	490	91.9	92.3
	26-35	8	1.5	93.8
	36-45	14	2.6	96.4
	46-55	12	2.2	98.6
	56-65	3	0.6	99.2
	Above 65	4	0.8	100.0
	Total	*533*	*100.0*	
Education	High School	10	1.9	1.9
	Intermediate	73	13.7	15.6
	Bachelor	404	75.8	91.4
	Masters	29	5.4	96.8
	Doctorate	17	3.2	100.0
	Total	*533*	*100.0*	
Profession	Student	428	80.3	80.3
	Government Job	27	5.1	85.4
	Private Job	8	1.5	86.9
	Business	18	3.4	90.3
	Household	2	0.4	90.7
	Unemployed	38	7.1	97.8
	Others	12	2.3	
	Total	*533*	*100.0*	
Monthly Income (PKR)	Less than 20000	380	71.3	71.3
	20000-39999	53	9.9	81.2
	40000-59999	16	3.0	84.2
	60000-79999	11	2.1	86.3
	80000-99999	15	2.8	89.1
	100000-149999	8	1.5	90.6
	More than 150000	50	9.4	100.0
	Total	*533*	*100.0*	

Study Construct Measurement

Consistent with the predetermined methodology, primary data were collected via a structured questionnaire comprising three sections. The first section included an introductory statement outlining the research objectives, ensuring participant confidentiality, and providing conceptual clarity. The second section captured demographic data (gender, age, education, profession, marital status, and monthly income) through seven closed-ended items. The third section operationalized the study constructs using a 7-point Likert scale (1 = strongly disagree to 7 = strongly agree), with items adapted from validated scales to ensure reliability and validity.

Affective Image was measured using 4 items adapted from (Lin, Morais, Kerstetter, & Hou, 2007). Source Creditability was measured in three domains Expertness by using 5 items, Trustworthiness by using 5 items and Attractiveness using 4 items adapted from (Ohanian, 1990). Intention to Purchase was measured using 8 items adapted from (Asif, Xuhui, Nasiri, & Ayyub, 2018; Kim, Xu, & Gupta, 2012; Pavlou, 2003). This tripartite design facilitated systematic data collection while aligning with established psychometric practices, ensuring robustness in analyzing the relationships between variables.

Data Analysis and Results

KMO and Bartlett's test

Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity assesses whether the data is suitable for factor analysis.

Table 2; Kmo And Bartlett's Test Statistics

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.977
Bartlett's Test of Sphericity	Approx. Chi-Square	19120.450
	df	325
	Sig.	.000

The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy is 0.977 (TABLE 2), which is considered "marvelous" (Kaiser, 1974). This indicates that the dataset is highly suitable for factor analysis, as the variables have strong correlations, making factor extraction meaningful. Since the Bartlett's test of sphericity results show that p-value is less than 0.05, thus Bartlett's test of sphericity is significant, meaning that the correlation matrix is not an identity matrix (Field, 2024). This confirms that there are enough correlations among the variables to proceed with factor analysis. Both tests strongly support the appropriateness of conducting factor analysis on this dataset.

Communalities

The communalities table provides insights into how well each variable is represented by the extracted factors in Principal Component Analysis (PCA).

Table 3; Communality Adequacy Test

	Initial	Extraction
AI1	1.000	.871
AI2	1.000	.897
AI3	1.000	.891
AI4	1.000	.878
SC1	1.000	.784
SC2	1.000	.847
SC3	1.000	.824
SC4	1.000	.851
SC5	1.000	.865
SC6	1.000	.808
SC7	1.000	.833
SC8	1.000	.843
SC9	1.000	.849
SC10	1.000	.850
SC11	1.000	.843
SC12	1.000	.827
SC13	1.000	.851
SC14	1.000	.833
IP1	1.000	.813
IP2	1.000	.844
IP3	1.000	.815
IP4	1.000	.841
IP5	1.000	.857
IP6	1.000	.836
IP7	1.000	.862
IP8	1.000	.859
Extraction Method: Principal Component Analysis		

The "Initial" communalities are all 1.000, indicating that each variable starts with 100% of its variance before extraction. The "Extraction" communalities represent the proportion of variance retained by the extracted components. In this dataset, all extraction values are above 0.78, showing that the selected factors capture a significant amount of variance from each variable (TABLE 3). The highest communality is 0.897 (AI2) (Field, 2024), meaning this variable is best represented by the extracted factors. The lowest communality is 0.784 (SC1), which still indicates a strong representation but is comparatively lower than the other variables. Since all communalities are well above 0.7 (J. F. Hair, Risher, Sarstedt, & Ringle, 2019), it confirms that all variables are adequately represented by the extracted factors, making them suitable for further analysis. No variable appears to be poorly represented or requires removal.

Rotated component matrix

The rotated component matrix presents the factor loadings of each variable after applying Principal Component Analysis (PCA) with Varimax rotation.

Table 4; Rotated Component Matrix

Rotated Component Matrix			
	Component		
	1	2	3
SC10	.874		
SC5	.874		
SC8	.874		
SC13	.873		
SC9	.872		
SC2	.868		
SC11	.863		
SC14	.861		
SC7	.860		
SC12	.856		
SC4	.854		
SC3	.854		
SC6	.833		
SC1	.830		
IP8		.885	
IP7		.882	
IP6		.881	
IP5		.876	
IP4		.871	
IP3		.869	
IP2		.855	
IP1		.851	
AI2			.861
AI1			.856
AI3			.849
AI4			.845
Extraction Method: Principal Component Analysis			
Rotation Method: Varimax with Kaiser Normalization			
a. Rotation converged in 5 iterations			

Source Credibility includes SC1 to SC14, with high loadings (≥ 0.83); these items appear to represent a single underlying construct. Intention to purchase through VR includes IP1 to IP8, with high loadings (≥ 0.85); this suggests a second distinct factor. Affective Image includes AI1 to AI4, with loadings (≥ 0.84), forming a third distinct construct.

A factor loading ≥ 0.70 is generally considered strong (J. F. Hair et al., 2019). Since all variables in this table exceed this threshold, they strongly associate with their respective components. No cross-loadings are observed (Tabachnick, Fidell, & Ullman, 2019), meaning each variable loads highly on only one factor, ensuring clear differentiation. The rotation method (Varimax with Kaiser Normalization) was used to enhance interpretability by maximizing the variance of factor loadings (Kaiser, 1974). The factor structure is well-defined, with three distinct components corresponding to different constructs. This suggests that the dataset has strong construct validity and is suitable for further analysis.

Reliability statistics

The Reliability Statistics table provides the Cronbach's Alpha (α) values for three constructs and it is a widely used measure of internal consistency (Field, 2024).

Table 5; Reliability Statistics

Variable	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	No of Items
Affective Image	.956	.956	4
Source Credibility	.985	.985	14
Intention to Purchase through VR	.973	.973	8

All the constructs in this study show excellent internal consistency (α > 0.90) (J. F. Hair et al., 2019), confirming that the measurement scales used for Affective Image, Source Credibility, and Intention to Purchase through VR are extremely reliable and appropriate for further analysis.

Summary item statistics

Table 6; Summary Item Statistics

Variable		Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	No of Items
Affective Image	Item Means	5.873	5.709	6.240	.531	1.093	.061	4
	Item Variances	2.571	2.506	2.615	.109	1.044	.002	4
Source Credibility	Item Means	5.446	5.373	5.516	.143	1.027	.001	14
	Item Variances	2.543	2.370	2.694	.325	1.137	.012	14
Source Credibility	Item Means	5.497	5.432	5.608	.176	1.032	.004	8
	Item Variances	2.316	2.205	2.509	.305	1.138	.012	8

The descriptive measures for the items in Affective Image, Source Credibility, and Intention to Purchase through VR are shown in TABLE 6. All the study constructs show high mean scores and low variability, that reflect steady responses from participants. The reliable scale performance is confirmed, as the small range of item variances and maximum/minimum ratios close to one. These findings recommend that the measurement model is well-structured and exhibts good psychometric properties (J. F. Hair et al., 2019; Tabachnick et al., 2019).

Model validity measures

Table 7; Model Validity Measures

	CR	AVE	MSV	MaxR(H)	Source Credibili	Intention to	Affective Image

					ty	Purchase through VR	
SC	0.985	0.823	0.370	0.985	**0.907**		
IP	0.973	0.817	0.284	0.973	0.533***	**0.904**	
AI	0.956	0.846	0.370	0.957	0.608***	0.490***	**0.920**

Note: † p < 0.100, * p < 0.050, ** p < 0.010, *** p < 0.001

The internal consistency, convergent validity, and discriminant validity of the constructs are shown in TABLE 7 (J. F. Hair et al., 2019). The composite reliability (CR) values for all constructs exceed the threshold of 0.70, representing high internal consistency and strong reliability (Nunnally & Bernstein, 1994). The average variance extracted (AVE) values surpass the recommended minimum value of 0.50, confirming strong convergent validity (Fornell & Larcker, 1981). The maximum shared variance (MSV) values for each construct are lesser than their corresponding AVE values, confirming discriminant validity (Fornell & Larcker, 1981). Max R(H) values are very close to the corresponding CR values, further reinforcing construct reliability and stability (Hancock & Mueller, 2001). The square roots of AVE (diagonal values) are greater than the correlations between constructs, confirming discriminant validity (Fornell & Larcker, 1981). Therefore the study model meets all validity and reliability requirements, making it appropriate for hypothesis testing and structural equation modeling (Hu & Bentler, 1999).

Goodness-of-fit statistical evaluation

Table 8; Goodness-Of-Fit Metrics

Measure	Estimate
Chi-Square (x2) or CMIN	676.367
Degree of Freedom (DF)	296
Normed Chi-Square (CMIN/DF)	2.285
Comparative Fit Index (CFI)	0.980
Standardized Root Mean Square Residual (SRMR)	0.021
Standardized Root Mean Square Residual (SRMR)	0.049
Probability of Close Fit (PCLOSE)	0.606

As all model fit indices fullfill the advised thresholds, thus the model shows excellent fit to the data (Hu & Bentler, 1999), as shown in TABLE 8. These outcomes confirm the use of structural equation model (SEM) for hypothesis testing.

Structural model analysis

The structural equation modeling (SEM) was applied using AMOS to empirically assess the hypothesized relationships. The results established that affective image ($\beta = 0.236$, $p < .001$) and source credibility ($\beta = 0.352$, $p < .001$) exerted substantial effects on customers' intention to purchase through VR (TABLE 9). The immersive experiences powered by AI boost emotional engagement, while SC guarantees the perceived authority and trustworthiness of material. Collectively these two factors promote consumer intent and confidence in virtual environments.

Table 9; Structural Path Analysis of the Hypothesized Model

| Path	Unstandardized Regression Weights			
	Estimate	S. E	C.R	P
Intention to Purchase through VR ← Affective Image	.236	.041	5.730	***
Intention to Purchase through VR ← Source Credibility	.352	.043	8.259	***

Hypothesis testing

Customers' intention to purchase through virtual reality was found to be significantly positively impacted as H1 (Affective Image → Intention to purchase through VR) and H2 (Source Credibility → Intention to purchase through VR) are supported by these findings, which emphasize the critical role that immersive experiences and reliable information play in influencing VR-mediated purchasing behaviour. The description of the results of the hypothesis testing is shown in TABLE 10.

Table 10; Summary of Hypotheses Tests

Hypotheses	Results
Hypothesis 1 [HI]: Intention to Purchase through VR ← Affective Image	Supported
Hypothesis 2 [H2]: Intention to Purchase through VR ← Source Credibility	Supported

Path Analysis

The influence of AI and SC on customers' intention to purchase through VR was assessed through path diagram analysis using AMOS. AI ($\beta = 0.26$, $p < .001$) and SC ($\beta = 0.37$, $p < .001$) had significant positive effects on IP (Figure 2). Interestingly, SC had a slightly greater effect, highlighting its crucial function in encouraging customer involvement and influencing decision-making via immersive experiences.
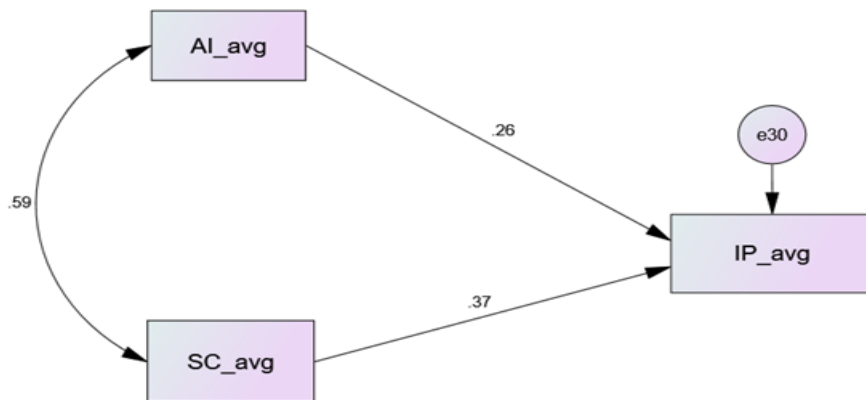
Figure 2: Structured solutions (SEM)
(Standardized estimates)

Discussion

The current study examines how affective image and source credibility affect intention to purchase through virtual reality (VR). The findings reflect that AI has a significant impact on IP through VR (H1). The virtual reality experiences have the power to provoke powerful emotional reactions, which in turn can improve brand perceptions and purchase intentions (Anaya-Sánchez, Rejón-Guardia, & Molinillo, 2024). These results imply that VR's immersive qualities can successfully raise customers' emotional engagement, which in turn raises their propensity to purchase. The findings also show that IP through VR is meaningfully impacted by SC (H2). The online sales success is positively impacted by their reputation (Ji, 2024). The virtual influencers found that through virtual involvement, their trustworthiness has a major impact on consumers' purchasing decisions (Agnihotri, Chaturvedi, & Tripathi, 2024). These results highlight how important it is for customers to purchase through digital technologies.

Conclusion

This study demonstrates that both affective image (H1) and source credibility (H2) significantly influence intention to purchase through VR. The validation of H1 aligns with theories of immersive emotional arousal, where VR's sensory richness amplifies affective stimuli, fostering deeper psychological connections and driving IP. Similarly, support for H2 reaffirms the centrality of credibility in persuasion, even within novel technological contexts, as credible sources in VR. These findings bridge affective computing, persuasion literature, and VR research, offering actionable insights for marketers to leverage emotionally resonant design and authoritative endorsements in VR campaigns.

This study investigates the intricate connections between the intention to purchase through VR and peripheral route of ELM. The findings make theoretical as well as practical contributions to the domains of consumer behavior, marketing and intention to use digital technology. This work theoretically contributes to the body of literature by showing that intention to purchase through VR is significantly influenced by both affective image and source credibility. Through the expansion in the knowledge of customer behavior, it illustrates how the well-established concepts of affective

image and source credibility from traditional marketing still hold true and have an impact in the immersive and interactive VR environment.

Researchers may now swiftly and accurately examine dynamic consumer processes, such as searching, evaluating, and selecting, in a realistic experimental setting such as modern VR technologies (Meißner et al., 2019; Xi & Hamari, 2021). Additionally, this study is useful for companies looking to use VR for sales and marketing. Businesses may effectively leverage VR's ability to drive purchase intentions and boost sales by concentrating developing or emotionally engaging experiences and fostering customer purchase intention. With empirical proof of VR's ability to increase purchase intention, these findings expand on preexisting ideas of immersive technology (Cummings & Bailenson, 2016; Steuer, Biocca, & Levy, 1995). This emphasizes how important it is for marketers to take these psychological aspects into account when creating VR marketing plans.

Pakistan's economy is anticipated to grow as more stores adopt e-commerce platforms to sell their goods online and get heavily involved in digital marketing. Even while e-commerce has grown significantly and gained popularity in Pakistan, a few organizational, technological, and regulatory challenges are limiting the nation's digitization. Cutting-edge technology has enabled programs like size-and-fit interfaces, virtual avatars, changing rooms, mirrors, and 3D body scans to intelligently satisfy customer needs such as sapphire, Uniworth and Royal Tag. This technology gives e-commerce platforms the appearance of an actual in-store transaction. Web 3.0 technologies are encouraging to offer mass-customized or created products online in order to satisfy the wants of the diverse community.

While this study provides valuable insights into the influences of affective image and source credibility on intention to purchase through VR, several limitations warrant consideration: Differences in VR hardware, software, and interfaces may limit the generalizability of findings. Demographic and cultural biases in participants may restrict broader applicability. Reliance on self-reported data risks social desirability or self-assessment biases. The future study could explore the following avenues: Comparing high- and low-immersion systems to assess impact on IP. Tailoring VR content to global audiences by examining cultural influences. Tracking VR's lasting effects on consumer attitudes and behavior over time. Integrating physiological/behavioral data to reduce self-report biases. Benchmarking VR against traditional media to clarify its unique selling proposition.

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