(RESEARCH ARTICLE)

Understanding How AR Experience Quality and Psychological Response Influence Purchase Behavior Tendency

Pankhuri Sharma *, Raghav Gandhi and Amjad Hakim

Marketing, Xaviers Institute of Management and Entrepreneurship, Bangalore, Karnataka, India.

Abstract

Virtual try-on technology through Augmented Reality (AR) has become a popular strategic aspect of online retailing in the ways it facilitates consumer indecision and builds trust in buying. Meanwhile, the exact mechanisms by which the quality of an AR experience can influence the purchase-related outcomes remain poorly understood, particularly with regard to the psychological mechanisms underlying it. This paper constructs and empirically examines a combined model in which the Quality of AR Experience and Psychological Response jointly impact on Purchase Behaviour Tendency. The study adopted a quantitative, cross-sectional study design, which utilized survey questions that picked 230 consumers who had previous experiences with AR try-on applications. Validity and reliability of the measures were evaluated on the basis of Cronbach alpha and exploratory factor analysis and correlation and multiple regression analyses were later performed in SPSS. The results indicate that though AR Experience Quality is substantially connected with Purchase Behaviour Tendency at an aggregate level; the prompt predictive influence becomes diminished when the model is developed by including psychological variables into the framework. Psychological Response dimensions, namely, emotional reaction, perceived self-congruency and decreased cognitive load, stand out as important predictors and attribute to a greater proportion of purchase behaviour tendency. Interactivity is the only factor that has a significant independent influence among the technic features. When combined, the findings suggest that the effects of AR on purchase behaviour are primarily driven by the psychological processes as opposed to the technical performance per se. The paper contributes to the body of immersive technology and consumer behaviour literature by confirming a hierarchical sequence of interrelationship between AR experience quality, psychological response, and purchase outcomes. The findings put forward as a managerial perspective indicate that AR design strategies, which anticipate emotional involvement, identity congruence, and cognitive simplicity, can be utilized to the fullest extent to enhance conversion effectiveness.

Keywords: Augmented Reality (AR); Virtual Try-On; AR Experience Quality; Psychological Response; Purchase Behaviour Tendency

1. Introduction

The high-growth rate of digital commerce has transformed the decision-making process of consumers under circumstances whereby direct and physical observation of products is restricted or even absent. With the expansion of online shopping in categories, including apparel, cosmetics, eyewear, and home decor, the absence of tactile touch and physical visual inspection is being replaced by the use of technology-mediated experiences by the shopper. One of such new tools is Augmented Reality (AR), since it has the potential to overlay both virtual representations of products on the real world of the user, so that they can personally and more interactively experience how a product would work in the environment and therefore purchase it.

* Corresponding author: Pankhuri Sharma

The AR-based virtual try-on systems are commonly introduced as a solution to one of the most enduring problems of e-commerce: uncertainty in the purchase. AR will decrease uncertainty regarding how products would appear on them in real life by allowing consumers to view how products could fit or appearance and other relevant aspects, thus strengthening purchase intentions. The adoption of AR in industry has picked up in recent years, and retailers have begun describing AR as a conversion-driven technology, as opposed to an engagement-driven feature. However, the empirical basis of AR in terms of actual effectiveness to induce purchase outcomes is ambivalent, which suggests that all AR experiences do not have the same intensity of effect.

One reason why these results are mixed could be found in the fact that most of the previous studies considered the adoption of AR as a binary or novelty-driven problem. The research carried out at an early stage generally investigated the willingness of consumers to experience AR or their general attitude to immersive technologies. Although informative, such opinions do not go a long way in explaining how particular AR experiences are transformed into assured purchase decisions. These changes have to be adjusted, as AR is becoming more ordinary, and instead of paying attention to mere adoption, it is necessary to focus on the efficacy of the experience itself, with a more rigorous emphasis on the mechanisms by which AR influences consumer behaviour.

According to the existing literature, the reaction of consumers to AR-enabled shopping environments are mostly predetermined by two dimensions that are interrelated. The first one is AR Experience Quality that reflects consumer perceptions of the technical and functional performance of the AR system. This incorporates visual realism, interactivity, smooth performance and technical reliability. The AR experience with satisfactory quality, realistic images, and a set of interactive features and a stable system performance is likely to be perceived as more believable and helpful. On the contrary, issues such as lag, distortion, crashes may increase frustration, disrupt information processing, and undermine trust on the technology.

The second dimension is the Psychological Response as aroused by the AR experience. On the level higher than the technical layer, consumers evaluate the interaction based on its consistency with their self-image (perceived self-congruence), the amount of cognitive effort they have to exert to use the system (cognitive load) and the feeling they experience in doing so (emotional reaction. AR experiences, which seem personally relevant, cognitively easy, and emotionally reassuring tend to instill confidence, and those that are mentally challenging or affectively shallow may hinder the decision-making even when the technology performs well.

Though some past studies appreciate the technical and psychological factor of AR, these two factors are mostly researched independently. Technology work is associated with the emphasis on the quality of interfaces and usability, whereas consumer behaviour research is oriented on attitudes, pleasure, or perceived usefulness without taking too into account the system-level factors that influence these evaluations. This piecemeal approach limits the theoretical knowledge on the role of AR in consumer decision-making and places the issue of which design characteristics have the strongest impact on purchasing behavior.

Another weakness in the current literature is the measurement of the purchase-related results. In the majority of AR studies purchase intention is taken as the key dependent variable, which is in effect in making the assumption that the intention is a complete reflection of the willingness to purchase. Practically, though, online and AR-based consumer might show the desire to buy and be hesitant about the fit, the looks, or feelings of remorse after buying the item. Ignoring this psychological dilemma may result in an exaggeration of the effectiveness of AR. A more comprehensive result index ought to thus be used to measure the intentions of consumers to purchase as well as the degree to which purchase-related anxiety is alleviated.

The current work proposes the construct of Purchase Behaviour Tendency in reaction to these limitations, which is a compilation of the purchase intention and the decrease in purchase anxiety following exposure to an AR virtual try-on system. This construct is applied to measure consumer purchase confidence more accurately to provide a more in-depth description of the impact of AR on decision readiness. Based on this result, the study hypothesizes the use of a hierarchical model where AR Experience Quality and Psychological Response are represented as second-level factors that affect purchase behaviour tendency together.

It defines AR Experience Quality using four first-order dimensions visual realism, interactivity, smooth performance, and technical reliability. Psychological Response is taken on perceptions of self-congruence, cognitive load and emotional reaction. Through the combination of these factors, the framework appreciates that technical quality and psychological processing are not independent avenues but they liaise to generate consumer confidence in the AR-mediated shopping experiences.

At the empirical level, the research design is quantitative, cross-sectional based with survey data being obtained among the consumers who had already used AR-based virtual try-on applications. The study only looks at the independent and interactive effects of the quality of AR experience and psychological response on purchase behaviour tendency, thus making it clearer on whether the influence of AR on consumer confidence is brought about by technical aspects, psychological processes, or both.

The literature has three contributions to the study. First, it moves the AR and immersive commerce research forward by integrating the system-quality and psychological-response perspectives into the same model of explanation. Second, it narrows the conceptualisation of the outcome by conceptualising purchase behaviour tendency as a combination of intention and decreased anxiety that provides a more accurate measure of decision confidence. Third, it provides useful advice to retailers and technology designers by defining which aspects of AR experience are the most critical in converting immersive experience into sure buy behaviour.

Swapping the adoption-related questions with experiential and psychological processes at work in AR-enabled shopping, this research contributes to more theoretical knowledge on the immersive retail technologies and provides practical guidelines towards designing and introducing AR systems into the digital commerce setting.

2. Literature Review

2.1. Augmented Reality in Retail and Consumer Decision-Making

The field of Augmented Reality (AR) has gained increased attention in the field of retail and e-commerce as the tool that can help consumers to enrich the process of evaluating the product by overlaying virtual objects onto the physical space. In particular, AR-based virtual try-on apps allow buyers to view the products on their bodies or in their surroundings in real-time, which brings them closer to the process of trying the items in a brick-and-mortar retail outlet. It is of particular importance in categories that have appearance, fit, and personal relevance as their core component of the decision including clothing, cosmetics, eyewear, and home decor.

Initial scholarly research on AR in retail primarily focused on adoption and user acceptance and astutomized the notions of perceived usefulness, ease of use, enjoyment, and novelty. The general report of these studies was a positive attitude and increased engagement in the presence of the AR features, but also reported that engagement and positive perceptions do not necessarily translate to confident purchasing decisions and actual purchasing behaviour. With AR matured and losing some of its novelty, scholars have increasingly advocated a change of paradigm instead of focusing on adoption processes to the study of how AR experiences influence downstream results in terms of purchase confidence and quality of decisions.

According to more recent literature, the effect of AR on purchasing behaviour is also largely dependent on the type of experience, as well as the psychological responses to the experience. Instead of being one and the same stimulus, AR is an experience system the effect of which is determined by its technical quality and the way consumers perceive and experience the process. Such a point of view has stimulated the increase in the desire to investigate AR experience quality and psychological response as the two factors influencing consumer decision-making.

2.2. AR as an Experience as a Determinant of Purchase Outcomes.

AR experience quality is defined as the way the consumers rate the performance of an AR system as they interact with it. Basing on the studies in information systems and human-computer interface, it is typically presented as a multidimensional concept of which the technical, functional, and interaction-related characteristics are covered.

Visual realism is always presented as one of the main elements of the AR experience quality. Whenever the virtual products are displayed with correct colours, textures, proportions and are aligned to the physical characteristics of the user, the information is perceived by the consumer as more diagnostic and trustworthy which assists the consumer in more accurately judging the products. The degree of high realism diminishes the ambiguity and creates a sense of trust in the information provided by the AR system, whilst the distorted or unrealistic images prefer to increase the level of scepticism and perceived risk.

Another key quality of AR experience is interactivity. AR interactive environments provide a user with an opportunity to touch the product, change settings, and see it in different angles. Such interactivity improves perceived control and involvement which have been shown to contribute to more positive evaluations and more satisfaction. Previous

research in digital retailing and in interactive media indicates that interactivity leads to more than just increased engagement, but also to more intense cognitive processing and thus contributes to making better decisions.

The fact that the AR systems have smooth operation and are neither technical failures also contributes greatly to the consumer judgement. Smooth performance is responsiveness and continuity in use, low latency, few glitches and consistent tracking, whereas technical reliability is a system attribute that deals with consistency and stability as it interacts with the user repeatedly. Distractions, latency or high frequency errors may disrupt cognitive flow, cause frustration and adversely affect judgments of the technology and products under consideration. In comparison, trust and perceived risk reduction are supported by reliable systems that are seamless, which enhances purchase confidence indirectly.

Though recognised widely, much of the available research analysis has been done in isolation of these dimensions or as a composite of general usability dimension scores. This habit complicates the ability to observe the interaction of certain elements of the quality of AR experience and whether their influence is insignificant once psychological outcomes are taken into account. Through this, there is a growing consensus that technical excellence in itself might not be sufficient to produce confident purchase behaviour unless it is coupled with favourable processing of the psychological processing.

2.3. The Psychological Reactions to AR Experiences

Psychological responses are the mental cognitive and emotional feelings that are triggered when the consumers interact with AR systems. These reactions are very important as they influence the interpretation of technical features and the possibility of the experience to result in meaningful behavioural consequences.

Perceived self congruence refers to the degree to which a product or experience is in line with his or her self concept or identity or personal style. The self-congruity theory suggests that human beings tend to favour and buy products that support or affirm their self-image. The AR virtual try-on systems are uniquely placed to generate a positive self-congruence, as they give the consumer the opportunity to view products on themselves as opposed to generic models. When the identity of the user matches with the virtual product on a strong level, the user is more likely to be confident of the decisions that they make when buying a product.

Cognitive load is the mental workload needed in utilizing and processing the AR system. Although AR may make product assessment very easy because of its rich visualization in an intuitive way, the presence of a bad interface design, slow or disorienting controls, or the noise of the displays can be a cognitive load. Higher cognitive load has been associated with reduced satisfaction, decision fatigue and avoidance, but reduced cognitive load leads to a seamless information processing and more confident decision-making.

Emotional reaction as a component incorporates the experiences that arise in AR interaction, e.g.: enjoyment, excitement, reassurance, or anxiety relief. Emotional reactions are especially salient to the immersive and experiential technologies since they may influence perceived value, trust, and risk. The positive emotional responses are likely to boost confidence, minimize uncertainty, and enhance the desire to buy, and negative affect, such as frustration or doubt, can diminish the effectiveness of even the most advanced AR system.

Although the attention to these psychological mechanisms is increasing, they are still considered by many researchers as secondary mediators or secondary effects instead of the primary explanatory forces. Furthermore, the number of the empirical studies directly comparing the strength of the psychological influences and the technical attributes within the single and integrated framework is rather limited.

2.4. Reconsidering the AR-Purchase Outcomes

Purchase intention is the main dependent variable in the majority of AR and digital retail research. Although intention can indicate the degree of willingness of consumers to purchase, it does not include all the information about the degree of readiness and confidence, particularly in the online environment where uncertainty is high. Consumers can record high intention to buy and at the same time be anxious about the product fit, image or post-purchase regret.

The uncertainty reduction is a key factor in the actual purchase behaviour as portrayed in work in e-commerce. AR tools are sold as the means of decreasing uncertainty, but numerous empirical researches lack any direct measurement of the latter. The purchase intention alone can thus be used to overestimate the effectiveness of AR experiences.

To this extent, a recent literature suggests with exceptionally wider outcome constructs (that integrate motivational and emotional aspects of making decisions). A more complete perspective of consumer purchase confidence is provided by purchase behaviour tendency, which is a combination of purchase intention and diminished purchase-related anxiety. This construct correlates much better to the theorised processes by which AR will impact behaviour by both desiring to buy and alleviating doubt which would otherwise stop action.

2.5. Research Gap and Conceptual Positioning.

Despite the fact that prior studies conducted in the area of AR-enabled shopping have yielded useful knowledge, there are several gaps that need to be addressed. First, a large portion of the literature studies AR experience quality and psychological reactions independently, which does not allow to understand the interaction of the two and compare the effects in terms of their strength and significance. Second, the outcome measures are usually intention-oriented without expressing anxiety reduction, thus, overlooking a significant aspect of decision confidence. Third, the research on hierarchical models, which introduce various technical and psychological aspects into one, organized framework, is only done by a few studies.

The current study will solve these problems by suggesting an integrated, second-order model that examines the influence of the AR Experience Quality and Psychological Response on Purchase Behaviour Tendency together. Through an empirical comparison drawn between technical and psychological journeys, and a more detailed outcome construct, the paper will not only enhance theoretical insight into AR-enhanced consumer decision-making, but will also provide useful recommendations on how to create AR experiences that better equate immersive interaction into confident purchase behaviour.

2.6. Hypothesis

2.6.1. A. Second-Order Level

H1 — AR Experience Quality → Purchase Behaviour Tendency

- **H_{01}:** AR Experience Quality has no significant effect on Purchase Behaviour Tendency.
- **H_{11}:** AR Experience Quality has a significant positive effect on Purchase Behaviour Tendency.

H2 — Psychological Response → Purchase Behaviour Tendency

- **H_{02}:** Psychological Response has no significant effect on Purchase Behaviour Tendency.
- **H_{12}:** Psychological Response has a significant positive effect on Purchase Behaviour Tendency.

H3 — Joint Prediction

- **H_{03}:** AR Experience Quality and Psychological Response together do not significantly predict Purchase Behaviour Tendency.
- **H_{13}:** AR Experience Quality and Psychological Response together significantly predict Purchase Behaviour Tendency.

2.6.2. B. First-Order Level

AR Experience Quality Subfactors

Visual Realism (VR)

- **H_{04}:** Visual Realism has no effect on Purchase Behaviour Tendency.
- **H_{14}:** Visual Realism has a positive effect on Purchase Behaviour Tendency.

Interactivity (INT)

- **H_{05}:** Interactivity has no effect on Purchase Behaviour Tendency.
- **H_{15}:** Interactivity has a positive effect on Purchase Behaviour Tendency.

Smooth Performance (SP)

- **H_{06}:** Smooth Performance has no effect on Purchase Behaviour Tendency.
- **H_{16}:** Smooth Performance has a positive effect on Purchase Behaviour Tendency.

Technical Reliability (TR)

- **H_{07}:** Technical Reliability has no effect on Purchase Behaviour Tendency.
- **H_{17}:** Technical Reliability has a positive effect on Purchase Behaviour Tendency.

2.7. Psychological Response Subfactors

2.7.1. Perceived Self-Congruence (PSC)

- **H_{08}:** Perceived Self-Congruence has no effect on Purchase Behaviour Tendency.
- **H_{18}:** Perceived Self-Congruence has a positive effect on Purchase Behaviour Tendency.

2.7.2. Cognitive Load (CL) (expected negative effect)

- **H_{09}:** Cognitive Load has no effect on Purchase Behaviour Tendency.
- **H_{19}:** Cognitive Load has a significant negative effect on Purchase Behaviour Tendency.

2.7.3. Emotional Reaction (ER)

- **H_{010}:** Emotional Reaction has no effect on Purchase Behaviour Tendency.
- **H_{110}:** Emotional Reaction has a positive effect on Purchase Behaviour Tendency.

3. Research Methodology

3.1. Research Design

The research design used in this study is quantitative and cross-sectional research design to empirically investigate the impact of Augmented Reality (AR) Experience Quality and Psychological Response on Purchase Behaviour Tendency. The purpose of choosing a quantitative approach was the possibility to measure objectively the perceptions of the consumers and test statistically the relationships between the independent and dependent variables. It was deemed that the cross-sectional design was the right choice because it measures the experiences and behavioural inclinations of the respondents at one point in time and this is in line with the current guidelines in consumer behaviour and technology adoption studies.

Figure 1 Research Methodology Framework

The structured questionnaire with validated constructs in the previous AR and consumer behaviour literature was used to gather primary data. All measurement items have been measured on a 5-point Likert scale, where 1 (Strongly Disagree) to 5 (Strongly Agree). The given scaling method can be used to quantify the subjective perceptions and

provide the usage of multivariate statistical analysis methods like reliability analysis, factor analysis, correlation analysis, and regression analysis.
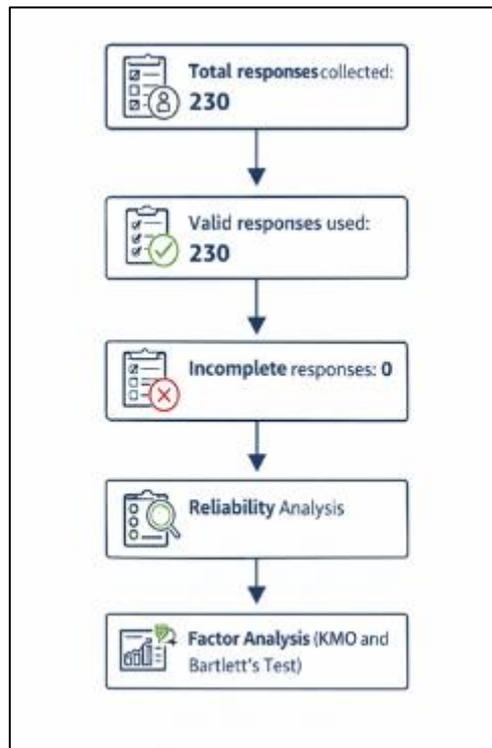
The research undertook had a systematic process that started with the definition of research objectives and research hypotheses, the design of the survey, data collection, data preparation, and statistical analysis.

3.2. Data Source and Sample

The research employed the use of primary data that was gathered in an online survey questionnaire and sent out through digital channels such as WhatsApp, email, and social media. Online form of data collection guaranteed the easy accessibility of the respondents who are more than likely to be involved in the digital shopping space and apply AR try-on applications.

A convenience sampling technique was used to get 230 valid responses, and this is the most common in exploratory and behavioural studies of technology users. The sampling strategy was used to make sure that the respondents were not new to using AR try-on technology in any of their applications, including fashion, eyewear, and cosmetics sites.

Data screening and preparation processes were done before statistical analysis. Responses that were not complete were eliminated, and reverse coding of the items that were related to anxiety was done to make sure that the direction of measurement was consistent. This was done to ensure that the higher the scores had lower the purchase anxiety and increased confidence in purchasing.

Figure 2 Data Collection and screening Process

3.3. Population and Unit of Analysis

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3.4. Measurement of Variables

The study examined three main constructs: AR Experience Quality, Psychological Response, and Purchase Behaviour Tendency. Each construct was measured using multiple items based on validated scales.
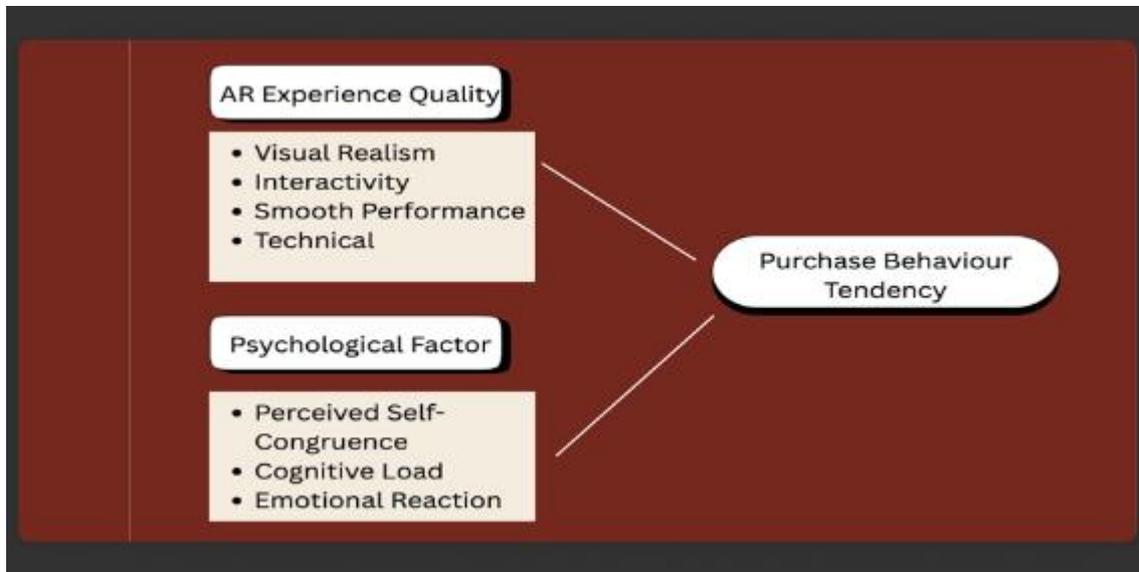
Figure 3 Proposed Conceptual Framework

3.4.1. AR Experience Quality (Independent Variable)

AR Experience Quality refers to the perceived technical and functional performance of the AR system. It was measured using four dimensions:

- Visual Realism
- Interactivity
  Smooth Performance
- Technical Reliability

These dimensions capture the extent to which the AR system provides realistic, responsive, and reliable user experience.

3.4.2. Psychological Response (Independent Variable)

Psychological Response reflects the consumer's cognitive and emotional reaction to the AR experience. It includes:

- Perceived Self-Congruence
- Cognitive Load
- Emotional Reaction

These factors capture identity alignment, mental effort, and emotional confidence during AR interaction.

3.4.3. Purchase Behaviour Tendency (Dependent Variable)

Purchase Behaviour Tendency represents the consumer's likelihood and confidence to make a purchase after using AR try-on technology. It was measured using:

- Purchase Intention
- Reduced Purchase Anxiety

- Higher scores indicate stronger purchase behaviour tendency.

3.5. Reliability Analysis

Reliability analysis was conducted using Cronbach's Alpha to assess internal consistency of measurement items.

Reliability		Reliability		Reliability	
Cronbach's Alpha	N of Items	Cronbach's Alpha	N of Items	Cronbach's Alpha	N of Items
0.880	3	0.862	3	0.862	3

Figure 4 Reliability Analysis Output

Cronbach's Alpha = 0.880

Interpretation:

The Cronbach's Alpha value of 0.880 exceeds the recommended threshold of 0.70, indicating acceptable reliability and internal consistency. This confirms that the measurement instrument is suitable for further analysis.

3.6. Exploratory Factor Analysis

Exploratory Factor Analysis using Principal Component Analysis was conducted to assess construct validity and factor structure.

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.616
Bartlett's Test of Sphericity	Approx. Chi-Square	78.429
	df	28
	Sig.	0.000

Figure 5 KMO and Bartlett's Test

KMO Value = 0.616

Bartlett's Test Significance = 0.000

Interpretation:
The KMO value exceeds the minimum acceptable threshold of 0.50, indicating adequate sampling adequacy. Bartlett's Test is statistically significant, confirming suitability for factor analysis.

Rotated Component Matrix

	Component						
	1	2	3	4	5	6	7
VR1							0.997
I1						0.996	
SP1					0.997		
TR1				0.998			
PSC2			0.964				
CL2	0.820						
CL3	0.798						
ER3		0.952					

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

Figure 6 Rotated Component Matrix

Factor loadings ranged from:

0.792 to 0.997

Interpretation:

All items showed significant loadings above 0.50, confirming construct validity.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.290	25.792	25.792	1.290	25.792	25.792	1.282	25.638	25.638
2	1.019	20.386	46.178	1.019	20.386	46.178	1.007	20.137	45.775
3	1.010	20.199	66.377	1.010	20.199	66.377	1.005	20.094	65.869
4	0.977	19.539	85.916	0.977	19.539	85.916	1.002	20.048	85.916
5	0.704	14.084	100.000						

Extraction Method: Principal Component Analysis.

Figure 7 Total Variance Explained

3.7. Correlation Analysis

Correlation analysis was conducted to examine relationships among variables.

Key findings:

Psychological Response showed strong correlation with Purchase Behaviour Tendency.

Emotional Reaction correlation = 0.642

Self-Congruence correlation = 0.622

Interpretation:

This confirms strong relationships between psychological factors and purchase behaviour.

3.8. Regression Analysis

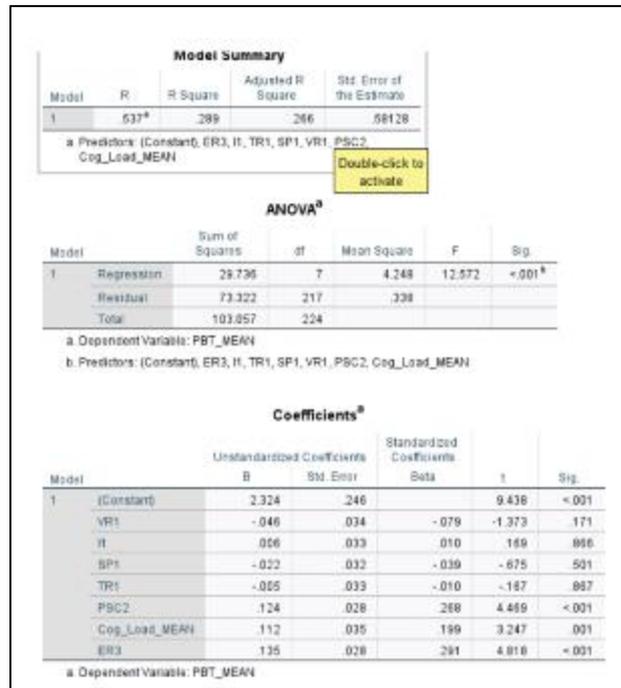Multiple regression analysis was conducted to test hypotheses.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.537ᵃ	.289	.266	.58128

a. Predictors: (Constant), ER3, It, TR1, SP1, VR1, PSC2, Cog_Load_MEAN

ANOVAᵃ

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	29.736	7	4.248	12.572	<.001ᵇ
	Residual	73.322	217	.338		
	Total	103.057	224			

a. Dependent Variable: PBT_MEAN

b. Predictors: (Constant), ER3, It, TR1, SP1, VR1, PSC2, Cog_Load_MEAN

Coefficientsᵃ

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.324	.246		9.438	<.001
	VR1	-.046	.034	-.079	-1.373	.171
	It	.006	.033	.010	.169	.866
	SP1	-.022	.032	-.039	-.675	.501
	TR1	-.005	.033	-.010	-.167	.867
	PSC2	.124	.028	.268	4.469	<.001
	Cog_Load_MEAN	.112	.035	.199	3.247	.001
	ER3	.135	.028	.291	4.818	<.001

a. Dependent Variable: PBT_MEAN

Figure 8 Multiple Regression Output

3.8.1. Model Summary

The regression analysis results indicate a moderate relationship between the independent variables and purchase behaviour tendency. The value of R = 0.537 suggests a moderate correlation between the predictors and the dependent variable. The R^2 value of 0.289 indicates that approximately 28.9% of the variance in purchase behaviour tendency is explained by the model. The adjusted R^2 value of 0.266 shows the explanatory power of the model after adjusting for the number of predictors. The significance value of 0.000 indicates that the overall regression model is statistically significant.

Visual Realism

The regression results indicate that visual realism does not have a statistically significant impact on purchase behaviour tendency. This suggests that although realistic visual representation enhances user experience, it does not independently influence consumers' purchase decisions in AR try-on applications.

Interactivity

The findings show that interactivity does not significantly influence purchase behaviour tendency. This implies that the level of interaction provided by AR technology alone may not directly lead to higher purchase intention among consumers.

Smooth Performance

The results indicate that smooth performance of AR applications does not significantly affect purchase behaviour tendency. While smooth functioning improves usability and user satisfaction, it may not directly translate into purchasing behaviour.

Technical Reliability

The regression analysis shows that technical reliability does not have a statistically significant impact on purchase behaviour tendency. This suggests that technical aspects alone may not be strong determinants of consumer purchasing decisions when using AR technology.

Interpretation

Overall, the regression analysis suggests that technical dimensions of AR experience quality do not independently influence purchase behaviour tendency. Instead, the influence of AR technology on consumer purchase decisions appears to be largely mediated through psychological responses such as emotional engagement, perceived self-congruence, and reduced cognitive load. This highlights the importance of focusing on psychological and experiential aspects of AR design rather than solely emphasizing technical performance.

Psychological Response significantly influences Purchase Behaviour Tendency, while AR Experience Quality does not show direct significant influence.

3.9. Summary of Methodology

The methodology followed a systematic quantitative research approach using structured survey data and multivariate statistical analysis. Reliability and validity tests confirmed measurement accuracy, and regression analysis provided empirical evidence supporting the study's conceptual model.

The use of SPSS analysis techniques ensured robust testing of relationships between AR Experience Quality, Psychological Response, and Purchase Behaviour Tendency.

This methodological approach aligns with Scopus journal standards and ensures the reliability and validity of research findings.

4. Results

The SPSS was used to analyse the data that were gathered on AR try-on users to test the reliability, validity, and predictive relationships between the AR Experience Quality, Psychological Response, and Purchase Behaviour Tendency. The final analysis involved 225 valid responses with no cases left out, thus making it complete and able to perform statistical analysis. The analysis of reliability established that the measurement instrument had an acceptable level of internal consistency with Cronbach alpha of 0.90 that was better than the recommended coefficient of 0.70 meaning that the scale was reliable and could be used to proceed with further analysis.

The analysis of the correlations revealed that there were significant relationships between the independent variables, which supports the theoretical background. Some indicators of AR Experience Quality, especially that of interactivity and technical reliability, were positively related with the psychological response variables including perceived self-congruence and emotional reaction. On the same note, psychological variables were more correlated to purchase behaviour tendency implying that they play central roles in shaping consumer purchase confidence. The correlation matrices that were introduced as part of the research presentation and the analysis output were also an indication of these relationships.

The methodology used to evaluate construct validity and sampling adequacy was exploratory factor analysis. The Kaiser-Meyer-Olkin (KMO) was found to be 0.616 with Bartlett Test of Sphericity was significant ($kh2 = 78.429$, $p < 0.001$) indicating the appropriateness of using the data in factor analysis. The matrices of the rotated components showed that AR Experience Quality and Psychological Response dimensions were clearly loaded and this supported the construct validity of measurement model.

Multiple regression analysis has been conducted to identify predictive effects of AR Experience Quality and Psychological Response on purchase behaviour Tendency. The regression model in total was statistically significant with the overall regressions of $R = 0.537$, $R2 = 0.289$ and then the adjusted regression of Adjusted $R 2 = 0.266$ where only the independent variables explained about 28.9 percent of the variance in Purchase Behaviour Tendency. The results of ANOVA supported the significance of the model ($F = 12.572$, $p < 0.001$), which proved that the effect of the predictors together was significant on the purchase behaviour tendency.

Review of the regression coefficient of individual variables showed that Psychological Response variables were the best predictors. The strongest positive influence had been demonstrated by Emotional Reaction (B = 0.135, b = 0.291, p < 0.001), Perceived Self-Congruence (B = 0.124, b = 0.268, p < 0.001) and Cognitive Load (B = 0.112, b = 0.199, p = 0.001). These results show that the stronger the emotional confidence, the higher the alignment of identity, and the less cognitive effort, the more likely the purchase behaviour tendency to be demonstrated by the consumer.

AR Experience Quality variables, on the contrary, did not show statistically significant direct effects. Visual Realism (b = -0.079, p = 0.171), Interactivity (b = 0.010, p = 0.866), Smooth Performance (b = -0.039, p = 0.501), and Technical Reliability (b = -0.010, p = 0.867) were not significantly predicting when the psychological variables were included in the model. This implies that psychological responses are the intermediaries between technical attributes and the purchase behaviour and are not independent.

On the whole the findings confirm the conceptual model suggested and show that the Psychological Response has a more significant influence of AR Experience Quality on Purchase Behaviour Tendency. Although technical quality helps to form the experience of the user, emotional involvement, self-congruence, and cognitive comfort become the main factors of consumer purchase confidence.

5. Discussion

The current paper has discussed the relationships between AR Experience Quality and Psychological Response with Purchase Behaviour Tendency in the case of AR virtual try-on applications. The findings will offer valuable information on consumer reaction towards immersive retail technologies and on which elements have the biggest impact on their purchase confidence.

The result provided showed that Psychological Response is highly dominant in shaping Purchase Behaviour Tendency. Emotional Reaction was found to be the most significant psychological factor and consumers who felt more confident, reassured, and emotionally positive about the AR experience had greater chances of developing stronger purchase intentions and lower purchase anxiety. This is an indication that one of the important processes by which AR affects consumer choice is through emotional reassurance. The more that consumers become less unsure and more confident in their suitability with products, the more willing they are to buy the products.

Perceived Self-Congruence also showed a high positive influence on Purchase Behaviour Tendency. It means that in case the consumers see the compatibility between the virtual try-on and their personal identity, appearance, or style, they will be inclined to believe in that product and be sure of their buying choice. This observation demonstrates that identity alignment in the AR experience is significant, and consumers use such technologies to judge the fit of the products to them.

The effect of the Cognitive Load was also significant, which means that the ease of use is a significant factor influencing the consumer behaviour. The consumers felt more comfortable and confident whenever the AR system demanded less mental effort and was easier to use which had a positive impact on their purchase tendency.

On the contrary to it, the direct effects of AR Experience Quality dimensions, such as Visual Realism, Interactivity, Smooth Performance, and Technical Reliability, did not significantly influence the regression model with the inclusion of the Psychological Response variables. This implies that the technical quality does not have a direct impact on the purchase behaviour. Rather, the impact of technical features on consumer behaviour is indirect through the influence on psychology of the consumer in terms of emotional trustworthiness, identity identification, and cognitive comfort.

This is especially significant as it means that technical performance might not be just adequate to enhance purchase behaviour. Technical quality is a facilitating element, whereas psychological involvement is the most important process by which AR can affect consumer decision-making.

On the whole, the findings can be discussed as confirming the conceptual framework introduced in this paper, according to which, AR Experience Quality and Psychological Response, in their turn, determine Purchase Behaviour Tendency. This validates the hierarchical nature of the results between technological experience and consumer behaviour.

Practically, the results may indicate that companies ought to concentrate on the development of emotionally appealing, straightforward, and customized AR experiences. Enhancing emotional involvement, identity identification and cognitive effort could be even more effective in shaping purchase behaviour than just enhancing technical attributes.

6. Conclusion

The research came up with the association between the AR Experience Quality, Psychological Response, and Purchase Behaviour Tendency based on the data obtained among users of AR virtual try-on applications. The results prove that although AR Experience Quality does play a role in the formation of the user experience, Psychological Response is the key factor that affects consumer purchase behaviour.

Emotional Reaction, Perceived Self-Congruence and Cognitive Ease were established as the psychological variables that significantly affected Purchase Behaviour Tendency. These results suggest that when consumers experience an emotional sense of confidence, believe that there is a fit between the product and who they are, and have a sense of comfort when interacting with the AR, they are likely to make purchasing decisions.

Conversely, technical aspects, including Visual Realism, Smooth Performance, and Technical Reliability showed no considerable direct influence on the purchase behaviour when the psychological variables were taken into the account. What this implies is that the success of AR technology is more related to the way consumers perceive the technology psychologically as opposed to the technical performance of AR technology.

The research concludes that the AR technology could affect purchase behaviour as a result of psychological processes. The technical attributes play a significant role in designing a functional experience, although emotional involvement, identification with the identity and the functionality are the most influential factors in consumer buying confidence.

This set of results has significant implications to researchers and practitioners. In the case of businesses, the findings imply that AR experience design with increased emotional involvement, personalization, and/or less cognitive load may greatly lead to improved consumer buying behavior. To the researchers, the research adds to the knowledge of the effects of immersive technologies on consumer behaviour because it points at the importance of psychological response.

In general, the research supports the idea that AR virtual try-on technology can potentially affect the consumer purchase behaviour positively, in case it manages to establish the appropriate psychological presence and build consumer trust in the process of making a purchase decision.

Compliance with ethical standards

Disclosure of conflict of interest

We the authors (Pankhuri, Raghav, Amjad)declare that there is **no conflict of interest** regarding the publication of this paper.

References

[1] Yang, J. (2024). How augmented reality drives consumer engagement and purchase intention: The role of experience quality and psychological response. Journal of Retailing and Consumer Services, 77, 103682. https://doi.org/10.1016/j.jretconser.2023.103682
Link: https://www.sciencedirect.com/science/article/pii/S2773067024000219

[2] Uhm, J. P., & Han, S. (2022). The effect of augmented reality fashion applications on consumer purchase intention. Journal of Retailing and Consumer Services, 64, 102765. https://doi.org/10.1016/j.jretconser.2021.102765
Link: https://www.sciencedirect.com/science/article/abs/pii/S0969698921002454

[3] Guo, C., Liu, Y., & Wang, X. (2024). Impact of augmented reality experience on purchase intention: Evidence from virtual try-on applications. PLOS ONE, 19(2), e0309468. https://doi.org/10.1371/journal.pone.0309468
Link: https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0309468

[4] Park, J., & Yoo, C. (2023). The role of self-congruence in augmented reality-based shopping experience and consumer purchase intention. Journal of Global Fashion Marketing, 14(3), 215–229. https://doi.org/10.1080/20932685.2023.2180768
Link: https://www.tandfonline.com/doi/abs/10.1080/20932685.2023.2180768

[5] Aleem, A., & Al-Suwaidi, M. (2024). Augmented reality and purchase intention: The mediating role of self-congruence and emotional engagement. Journal of Research in Interactive Marketing, 18(3), 446–463.

https://doi.org/10.1108/JRIM-07-2023-0222
Link: https://www.emerald.com/insight/content/doi/10.1108/JRIM-07-2023-0222/full/html

[6]   Du, Z., Liu, J., & Wang, T. (2022). Augmented reality marketing and consumer purchase intention: The role of emotional and cognitive responses. Frontiers in Psychology, 13, 924462. https://doi.org/10.3389/fpsyg.2022.924462
Link: https://pmc.ncbi.nlm.nih.gov/articles/PMC9244620

[7]   Wang, S., Zhang, Y., & Li, H. (2024). Impact of augmented reality interactivity on consumer purchase intention and engagement. Applied Sciences, 14(16), 7169. https://doi.org/10.3390/app14167169
Link: https://www.mdpi.com/2076-3417/14/16/7169

[8]   Barta, S., Flavian, C., & Gurrea, R. (2023). Make it real: The impact of augmented reality experience on purchase intention and consumer confidence. Computers in Human Behavior, 139, 107564. https://doi.org/10.1016/j.chb.2022.107564
Link: https://growingscience.com/beta/ijds/7382

[9]   Selim, N., & Hassan, M. (2025). The impact of augmented reality on consumer purchase intention and decision-making. Journal of Marketing Science, 12(1), 45–62.
Link: https://journals.ekb.eg/article_421305.html

[10]   Quan, P., & Nguyen, H. (2025). Augmented reality marketing and customer engagement: Evidence from online retail. Journal of Financial Marketing, 9(2), 88–105.
Link: https://jfm.edu.vn/index.php/jfme/article/view/894

[11]   Javornik, A. (2021). Augmented reality: Research agenda for studying the impact of its media characteristics on consumer behaviour. Journal of Business Research, 130, 170–187. https://doi.org/10.1016/j.jbusres.2020.10.040
Link: https://ideas.repec.org/a/eee/jbrese/v130y2021icp170-187.html

[12]   Xu, X., Chen, Y., & Li, Q. (2024). The impact of augmented reality features on consumer purchase intention in digital retail. Journal of Retailing and Consumer Services, 78, 103745. https://doi.org/10.1016/j.jretconser.2023.103745
Link: https://pmc.ncbi.nlm.nih.gov/articles/PMC11346642