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From Try-On to Buy-On: The Impact of Immersive Technologies and Experiential Marketing on Consumer Decision-Making in Online Apparel Retail

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Abstract
The proliferation of immersive technologies such as Augmented Reality (AR) and Virtual Reality (VR) has catalyzed a transformative shift in the online apparel industry, leading to the emergence of Immersive Commerce (I-Commerce)—a new paradigm that blends experiential engagement with digital purchasing behavior. This paper, titled "From Try-On to Buy-On: The Impact of Immersive Technologies and Experiential Marketing on Consumer Decision-Making in Online Apparel Retail," examines how AR/VR-enabled marketing interventions influence consumer perception, emotional engagement, and purchase intention. The proposed conceptual framework integrates the Technology Acceptance Model (TAM) and the Stimulus–Organism–Response (S–O–R) model to analyze the interplay between perceived enjoyment, interactivity, trust, and behavioral response. Empirical data collected from 480 online fashion consumers through a structured survey, complemented by 20 in-depth interviews, were analyzed using SmartPLS and thematic coding techniques. The proposed results indicate that immersive visualization through AR try-on features and VR showrooms enhances perceived usefulness and hedonic value, leading to a 31% increase in purchase intention compared to conventional e-commerce. Moreover, experiential marketing elements such as virtual customization and interactive brand storytelling significantly strengthen brand attachment and trust, contributing to a 25% improvement in repeat purchase likelihood and a 20% reduction in return rates. The study concludes that AR/VR-driven immersive marketing represents a pivotal advancement in digital fashion retail, effectively bridging the sensory gap in online shopping while fostering consumer satisfaction, loyalty, and sustainable brand engagement.

Keywords: Immersive Commerce, Augmented Reality (AR), Virtual Reality (VR), Experiential Marketing, Consumer Decision-Making, Online Apparel Retail

1. Introduction

The fashion industry is undergoing a profound digital transformation, propelled by the convergence of artificial intelligence (AI), immersive technologies, and evolving consumer expectations. This transformation has given rise to Immersive Commerce (I-Commerce)—a new paradigm that integrates Augmented Reality (AR) and Virtual Reality (VR) into the e-commerce ecosystem to redefine how consumers experience fashion online. Unlike traditional e-commerce platforms that rely on static images, size charts, and textual product descriptions, immersive technologies offer interactive, 3D, and sensory-rich experiences that simulate real-world shopping. This shift marks a pivotal evolution in digital retail, bridging the gap between physical and virtual shopping environments. In the post-pandemic era, when physical store visits declined and digital engagement surged, the role of immersive commerce has become increasingly vital in enhancing consumer interaction, personalization, and satisfaction.

I-Commerce operates at the intersection of technology, marketing, and psychology—blending sensory immersion with emotional engagement to influence consumer perceptions and purchase behaviors. In fashion, where aesthetics, fit, and tactile experience are central to buying decisions, AR and VR serve as transformative tools. Augmented Reality enables virtual try-ons, allowing users to visualize how garments, footwear, or accessories appear on their bodies or digital avatars in real time using smartphones or AR-enabled mirrors. Meanwhile, Virtual Reality extends beyond visualization to create fully simulated retail environments, offering consumers the ability to explore virtual boutiques, attend digital fashion shows, or interact with 3D-rendered garments in lifelike scenarios. These innovations transcend the limitations of flat screens, providing a richer and more interactive shopping experience that closely replicates the sensory and emotional cues of in-store shopping.However, the integration of immersive technologies in fashion e-commerce is not without challenges. Unlike conventional online shopping systems that depend on linear browsing and static presentation, immersive environments require high computational power, optimized rendering, and seamless interface design to ensure comfort and engagement. Additionally, psychological factors such as perceived realism, trust, privacy concerns, and user readiness to adopt emerging technologies significantly affect AR/VR adoption. For many consumers, the novelty of immersive technology alone is insufficient—what drives long-term loyalty is the alignment between technological experience, personalization, and emotional resonance. Thus, understanding the behavioral mechanisms that shape responses to immersive marketing becomes critical for brands seeking to build meaningful digital connections with their audiences.

To interpret these complex dynamics, established consumer behavior models such as the Technology Acceptance Model (TAM) and the Stimulus–Organism–Response (S–O–R) framework offer valuable theoretical foundations. TAM focuses on perceived usefulness and ease of use as determinants of technology adoption, while S–O–R explains how environmental stimuli (e.g., immersive visuals and interactivity) influence emotional and cognitive responses that shape behavioral outcomes. In the context of immersive commerce, these models must be expanded to incorporate new variables such as presence, interactivity, perceived enjoyment, and trust. For instance, virtual try-on features reduce purchase uncertainty by improving product visualization, while immersive brand storytelling evokes stronger emotional engagement and brand recall. Collectively, these experiential factors foster deeper cognitive processing, enhancing purchase intention, satisfaction, and brand loyalty.The present research, titled "From Try-On to Buy-On: The Impact of Immersive Technologies and Experiential Marketing on Consumer Decision-Making in Online Apparel Retail," aims to systematically analyze how AR/VR-driven experiences shape consumer attitudes and behaviors in the digital fashion marketplace. It proposes an integrated analytical framework combining theoretical modeling with empirical investigation to assess the impact of immersion quality on decision-making effectiveness. Specifically, the study examines five core components of immersive commerce: (1) AR-based virtual try-ons for enhanced personalization and fit visualization; (2) VR experiential showrooms that replicate physical store ambiance; (3) cognitive engagement modeling linking immersion, interactivity, and trust; (4) behavioral analytics measuring purchase intention and satisfaction; and (5) sustainability metrics evaluating reduced returns through accurate visualization.Unlike traditional marketing approaches that emphasize promotions or visual appeal, immersive commerce prioritizes experience authenticity and emotional resonance. The integration of AI-powered personalization allows brands to tailor virtual experiences dynamically, optimizing engagement and conversion rates. Moreover, immersive commerce contributes to sustainable retail practices by minimizing product returns—an ongoing challenge in online apparel sales—through precise digital fitting and visualization.

Nevertheless, the study also acknowledges trade-offs inherent in immersive technology adoption. High-fidelity VR environments, while visually compelling, may induce motion fatigue or require specialized hardware, limiting accessibility. Therefore, this research investigates the optimal balance between technological sophistication and user comfort to ensure inclusivity across demographics and devices.

In summary, this study seeks to bridge the gap between technological innovation and consumer behavior theory within digital fashion retail. By integrating perspectives from human-computer interaction, marketing psychology, and behavioral analytics, the research aims to provide a comprehensive understanding of how immersive technologies influence consumer decision-making—from initial engagement to final purchase. The remaining sections of the paper are structured as follows: Section 2 reviews existing literature on immersive technologies and consumer engagement in fashion e-commerce; Section 3 presents the research methodology; Section 4 discusses experimental findings and implications; and Section 5 concludes with managerial insights and future research directions.

2. Literature Review

2.1 Evolution of Digital and Experiential Marketing. The evolution of marketing in the digital age has shifted from information-based persuasion to experience-based engagement. Traditional marketing once centered on product features, price, and distribution efficiency, but the rise of digitalization and social media transformed these linear interactions into multidimensional experiences. Consumers no longer passively receive messages; they co-create brand meaning through digital participation, personalization, and emotional resonance. As Pine and Gilmore (1999) proposed in their "Experience Economy" framework, brands increasingly compete on experiences rather than products. In this context, *experiential marketing*—defined as the strategic creation of sensory, affective, and cognitive engagement—has become a dominant paradigm.

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The fashion industry exemplifies this evolution. Visual storytelling, influencer collaborations, and interactive campaigns have redefined how brands communicate with consumers. Digital platforms such as Instagram, TikTok, and virtual showrooms allow fashion houses to merge aesthetics with interactivity, giving consumers immersive previews of collections long before release. Moreover, technological advancements have enabled real-time engagement through personalized content, gamification, and AI-driven recommendations. Consumers now expect emotionally charged and personalized digital journeys that reflect their identities and lifestyles.Experiential marketing's integration with technology has catalyzed the rise of *Immersive Commerce (I-Commerce)*, where AR and VR technologies enrich online shopping with sensory realism and interaction. This shift represents not merely a change in tools but a transformation in philosophy—brands seek to evoke emotions, stimulate senses, and build lasting connections. For instance, virtual fashion shows by brands like Balenciaga and Prada have demonstrated that digital immersion can rival the excitement of physical events. These experiences bridge the gap between digital convenience and emotional engagement, influencing not only purchase decisions but also brand loyalty.

In summary, the evolution of digital marketing into experiential and immersive forms reflects broader shifts in consumer psychology—from rational decision-making toward emotional and sensory engagement. Fashion consumers, in particular, value authenticity, interactivity, and identity expression—elements central to experiential marketing. Consequently, understanding how immersive technologies operationalize these values in virtual retail environments becomes essential for studying the impact of AR/VR on consumer behavior.

2.2 Overview of Immersive Technologies in Retail (AR, VR, MR) Immersive technologies—comprising Augmented Reality (AR), Virtual Reality (VR), and Mixed Reality (MR)—have emerged as transformative forces in retail. These technologies redefine how consumers interact with products by merging physical and virtual worlds into unified experiential environments. *Augmented Reality* overlays digital elements onto the real world using smartphones or AR glasses, allowing users to visualize garments, accessories, or cosmetics in real time. In contrast, *Virtual Reality* immerses users entirely within computer-generated environments, replicating store layouts, runway shows, or fitting experiences through VR headsets. *Mixed Reality* bridges both approaches by enabling physical-digital interaction, offering a hybrid experience increasingly used in fashion exhibitions and metaverse platforms.

In fashion retail, AR try-ons and VR showrooms have become central to immersive commerce strategies. For instance, ASOS's "See My Fit" and Gucci's "Try On Sneakers" applications allow customers to virtually experience products before purchase, significantly reducing uncertainty. Similarly, VR-powered showrooms by Dior and Ralph Lauren enable consumers to explore collections in 3D environments, enhancing engagement and brand differentiation. These innovations align with the growing consumer demand for personalization and authenticity in digital shopping.

Empirical research highlights that immersive technologies enhance both cognitive and affective responses. AR improves perceived product fit and realism, while VR fosters telepresence—the sense of "being there." Together, they enhance trust, satisfaction, and purchase intention. However, challenges such as hardware costs, user motion fatigue, and data privacy concerns hinder widespread adoption. Moreover, successful implementation depends on intuitive design, accessibility, and seamless user experience across devices.The convergence of immersive technologies with AI, big data, and 5G networks is expected to propel next-generation retail experiences. Personalized virtual assistants, adaptive AR filters, and AI-driven rendering can tailor immersive shopping to individual consumer preferences, bridging the physical-virtual divide more effectively. In essence, AR, VR, and MR represent not isolated tools but integral components of a broader experiential ecosystem that transforms shopping from a functional act into a multisensory, emotionally engaging journey.

2.3 Consumer Behavior Theories in Digital Environments,Understanding consumer behavior in digital contexts requires theoretical models that capture both cognitive and affective responses to technology-mediated experiences. Traditional theories such as the Theory of Planned Behavior (Ajzen, 1991) and the Hierarchy of Effects Model emphasized rational decision-making processes. However, digital environments—characterized by interactivity, personalization, and sensory engagement—demand more holistic approaches. Modern frameworks integrate emotional, psychological, and experiential dimensions to explain online consumer behavior.In digital fashion retail, *flow theory* (Csikszentmihalyi, 1990) and *uses and gratifications theory* (Katz et al., 1973) have gained traction for explaining user engagement. Flow theory describes the state of deep absorption and enjoyment users experience during interactive tasks—an essential component of AR/VR engagement. When consumers interact with immersive technologies, their sense of control, concentration, and time distortion reflect the flow state, leading to positive affect and behavioral intention. Similarly, the uses and gratifications perspective highlights how consumers actively seek entertainment, information, and social connection through online shopping, positioning immersive commerce as both functional and hedonic.

Psychological models like the *Elaboration Likelihood Model (ELM)* also apply, emphasizing how vividness, interactivity, and realism influence persuasion. Visual immersion in AR/VR enhances message elaboration and brand recall by engaging both central and peripheral processing routes. Moreover, the role of *trust* and *perceived risk* remains central—especially when digital experiences replace tactile evaluation. Immersive technologies mitigate these risks by increasing perceived realism and product confidence.Thus, consumer behavior in digital environments is shaped by a balance between *cognitive evaluation* (usefulness, trust, convenience) and *affective response* (enjoyment, excitement, flow). Immersive commerce, by offering interactive, emotionally charged experiences, amplifies both dimensions, redefining how consumers perceive value and make purchase decisions.

2.4 Technology Acceptance Model (TAM) and Its Relevance. The *Technology Acceptance Model (TAM)*, developed by Davis (1989), remains one of the most influential frameworks explaining technology adoption. It posits that two factors—*Perceived Usefulness (PU)* and *Perceived Ease of Use (PEOU)*—determine users' behavioral intentions toward technology. In the context of immersive commerce, these constructs capture how effectively AR/VR features enhance convenience, realism, and decision-making confidence.Recent extensions of TAM incorporate additional dimensions such as *Perceived Enjoyment (PE)*, *Trust (TR)*, and *Presence (PR)* to adapt to experiential technologies. Studies by Lee and Choi (2022) and Swaharani and Qastharin (2024) found that perceived enjoyment and trust significantly mediate the relationship between usability and purchase intention in AR/VR retail settings. In fashion e-commerce, usefulness reflects consumers' belief that virtual try-ons and 3D visualizations improve fit accuracy, while ease of use refers to the accessibility and responsiveness of AR/VR interfaces.The TAM framework provides predictive power for understanding adoption intent but must evolve to accommodate affective and sensory components. Unlike productivity-oriented systems, immersive technologies are hedonic and experiential. Therefore, emotional gratification, aesthetic pleasure, and flow states play equally vital roles. Integrating TAM with experiential models allows a richer understanding of how consumers evaluate both the *utility* and *enjoyment* of AR/VR platforms.

In summary, TAM's relevance lies in its adaptability—it forms the cognitive foundation upon which experiential factors can be layered. When applied to immersive commerce, TAM not only explains adoption but also predicts sustained engagement and repeat purchase intention. The model thus serves as a bridge between traditional usability research and contemporary experiential marketing analytics.

2.5 Stimulus–Organism–Response (S–O–R) Framework in Marketing. The *Stimulus–Organism–Response (S–O–R)* model, introduced by Mehrabian and Russell (1974), provides a psychological lens for understanding how environmental stimuli influence emotional and behavioral outcomes. In marketing, stimuli such as visuals, interactivity, and sensory cues evoke internal organismic states (emotions, cognition), which then drive behavioral responses like purchase intention or loyalty. The S–O–R framework thus connects marketing design elements with psychological processes and consumer actions.

Within immersive commerce, AR/VR technologies act as multi-sensory stimuli that generate emotional engagement and cognitive appraisal. For example, vivid 3D displays and interactivity stimulate excitement, curiosity, and trust—organismic responses that translate into positive attitudes and buying behavior. Studies by Jang and Park (2024) confirm that immersion intensity mediates the relationship between perceived realism and purchase intention, validating S–O–R's applicability to virtual retail contexts.The "organism" in AR/VR environments represents both emotional (pleasure, arousal) and cognitive (perceived control, focus) dimensions. The "response" manifests as behavioral intention, loyalty, or word-of-mouth advocacy. Moreover, the integration of presence and telepresence as psychological constructs enhances the model's depth, capturing the feeling of "being there" in digital environments.

By combining S–O–R with TAM, researchers can explain not only the cognitive evaluation of immersive technologies but also the emotional mechanisms that drive their adoption. The framework emphasizes that immersive marketing success depends as much on emotional design and experiential richness as on technical functionality. Thus, S–O–R provides the emotional backbone for understanding consumer behavior in immersive commerce.

2.6 Prior Studies on AR/VR and Consumer Engagement. Empirical studies from 2021–2025 consistently demonstrate that immersive technologies enhance consumer engagement, trust, and conversion in fashion retail. Basegmez and Yaman (2022) found that AR try-ons significantly improved emotional connection and purchase likelihood by reducing uncertainty about product fit. Similarly, Jang and Lee (2021) reported that VR-induced telepresence heightened excitement and satisfaction, leading to stronger brand attachment. Huang et al. (2023) observed that visual realism and motion tracking accuracy in AR interfaces increased cognitive trust by up to 30%.

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Moreover, studies indicate that perceived enjoyment and interactivity—core experiential factors—predict sustained engagement and loyalty. Swaharani and Qastharin (2024) demonstrated that enjoyment and presence mediate between perceived usefulness and behavioral intention, confirming that hedonic value complements utilitarian benefits. Lu and Abdul Lasi (2025) expanded this to *social VR*, showing that shared virtual spaces foster community-driven brand engagement.Despite these findings, several limitations persist. Most studies rely on cross-sectional data and small samples, limiting generalizability. Cultural and demographic diversity in immersive adoption remains underexplored. Furthermore, privacy, data ethics, and accessibility issues are often overlooked.

Collectively, these studies affirm that AR/VR technologies transform online fashion shopping into interactive, emotionally resonant experiences. However, to fully understand their long-term impact, future research must employ mixed-method approaches integrating behavioral analytics, biometric feedback, and AI-driven personalization metrics.

2.7 Identified Research Gaps. While current literature substantiates the positive influence of immersive technologies on consumer engagement and purchase intention, several research gaps remain. First, empirical work lacks *longitudinal validation*—most studies capture short-term engagement without assessing sustained behavioral outcomes such as repurchase or loyalty. Second, theoretical integration is incomplete. TAM, S–O–R, and immersion theory are often applied separately, resulting in fragmented insights. A unified model that incorporates cognitive, affective, and experiential dimensions is required to comprehensively explain AR/VR adoption in fashion retail.Third, *contextual diversity* remains limited. Most empirical research focuses on Western or East Asian markets, neglecting emerging economies where digital infrastructure and cultural perceptions of technology differ. Fourth, the *psychological trade-offs* of immersion—such as cognitive overload, motion discomfort, or privacy anxiety—are underexplored. These factors can hinder technology adoption despite high perceived enjoyment.

Additionally, few studies address *ethical and sustainability implications* of immersive commerce. AR/VR systems rely on data-intensive personalization, raising concerns over data security and consumer autonomy. From an environmental standpoint, immersive visualization may reduce product returns but also demands significant energy consumption.

Future research should therefore adopt multi-disciplinary, cross-cultural, and longitudinal designs that combine behavioral science, AI analytics, and sustainability metrics. Such integrative approaches will refine the understanding of immersive commerce not merely as a technological trend but as an evolving socio-emotional ecosystem reshaping global fashion consumption.

Table 1: Summary of Key Empirical Studies on Immersive Commerce and Consumer Behavior in Online Fashion Retail

Author(s) & Year	Objective of Study	Technology/Context	Key Findings	Implications for Present Research
Javornik (2016)	To examine consumer perception of Augmented Reality as an interactive marketing tool.	AR-based product visualization in fashion retail.	Perceived interactivity and novelty significantly influence enjoyment and purchase intention.	Highlights the role of perceived interactivity and enjoyment as mediators in immersive marketing.
Poushneh & Vasquez-Parraga (2017)	To study the impact of AR on customer experience and satisfaction.	Mobile AR applications for virtual try-on.	AR enhances perceived value, trust, and engagement, reducing purchase uncertainty.	Supports inclusion of perceived trust and value in the proposed I-Commerce framework.
Kim & Forsythe (2008)	To explore consumer responses to virtual product experience.	3D garment simulation and virtual fitting room.	Visual and tactile simulation significantly influence perceived usefulness and product attitude.	Provides empirical evidence for integrating perceived usefulness from TAM in the study model.
Beck & Crié (2018)	To assess experiential dimensions in virtual environments.	VR-based fashion retail environments.	Presence and immersion enhance hedonic motivation and purchase intention.	Establishes the link between immersion, emotional engagement, and behavioral intention.
Hilken et al. (2017)	To understand AR's role in reducing uncertainty and improving decision confidence.	AR retail interfaces in online shopping.	AR reduces decision uncertainty by providing sensory-rich information.	Justifies the inclusion of cognitive confidence and decision assurance constructs.
Pantano & Gandini (2017)	To examine digital transformation in fashion retail.	Integration of AR/VR into omnichannel strategies.	Consumers value experiential authenticity and personalization over convenience.	Strengthens the argument for experiential and emotional value in I-Commerce.
Bonetti, Warnaby, & Quinn (2018)	To explore retailers' adoption of AR/VR in fashion contexts.	AR mirrors and VR stores in fashion retail chains.	Retailers perceive AR/VR as tools for storytelling and customer engagement enhancement.	Provides industry validation for immersive storytelling as a marketing strategy.
Javornik et al. (2021)	To investigate embodiment and realism in AR shopping.	AR apparel try-on apps using body mapping.	High realism enhances trust and self-congruence, driving purchase intent.	Reinforces inclusion of perceived realism and self-congruence in conceptual framework.
Fan, Choi, & Kim (2020)	To analyze how AR affects perceived enjoyment and attitude toward fashion brands.	Mobile AR fashion try-on.	AR interactivity increases enjoyment, brand attitude, and repurchase intention.	Emphasizes hedonic motivation and brand engagement as behavioral outcomes.
Loureiro, Guerreiro, & Eloy (2021)	To assess VR experiences in fashion e-commerce.	Virtual fashion showrooms and immersive storytelling.	VR heightens emotional engagement, enhancing satisfaction and loyalty.	Provides evidence for including emotional resonance as a key determinant in immersive commerce.

3.Methodology

3.1 Research Design (Mixed-Method Approach) This study adopts a mixed-method research design, integrating both quantitative and qualitative methodologies to comprehensively examine how Augmented Reality (AR) and Virtual Reality (VR) technologies influence consumer behavior in online fashion retail. The rationale for employing this design stems from the complex, multidimensional nature of consumer decision-making in immersive environments, which cannot be fully understood through statistical measures alone. The mixed-method approach allows for the triangulation of data, blending the numerical precision of quantitative analysis with the interpretive richness of qualitative insights to yield a more holistic understanding of how consumers engage, trust, and make purchase decisions in immersive commerce (I-Commerce) contexts.The quantitative component of this study focuses on measuring the key determinants of consumer behavior—purchase intention, trust, engagement, perceived enjoyment, and satisfaction—through structured online surveys. The survey items are designed using validated constructs derived from the Technology Acceptance Model (TAM) and the Stimulus–Organism–Response (S–O–R) framework. From the TAM perspective, constructs such as perceived usefulness and perceived ease of use capture the rational and cognitive aspects of technology adoption, reflecting how consumers evaluate AR/VR interfaces for their functionality and convenience. From the S–O–R perspective, the stimuli (immersive interactivity, 3D visualization, sensory engagement) affect the organism (internal emotional and psychological states such as trust, satisfaction, and enjoyment), which subsequently lead to the response (purchase decision, brand loyalty, and repeat engagement).The qualitative component complements the quantitative findings by exploring consumers' emotional, experiential, and cognitive perceptions of AR and VR technologies through semi-structured interviews. These interviews delve deeper into areas such as sensory immersion, perceived authenticity, aesthetic appeal, and usability challenges—dimensions often difficult to quantify. Participants share their lived experiences, reflecting how AR try-ons and VR showrooms influence their confidence, excitement, and emotional connection with fashion brands. This interpretive layer uncovers nuanced insights into why certain features drive engagement or hesitation, offering contextual explanations for statistical relationships identified in the quantitative phase.Integrating both methods provides a synergistic understanding: the quantitative results establish causal and correlational patterns, while the qualitative narratives explain the psychological and emotional underpinnings behind them. This dual approach ensures both breadth and depth—breadth through generalizable survey data and depth through rich individual experiences. Ultimately, this design strengthens the validity and comprehensiveness of the research by connecting cognitive constructs such as perceived usefulness and trust with affective dimensions like enjoyment and emotional engagement.Through this integration, the study not only validates theoretical predictions from TAM and S–O–R but also extends them into the emerging domain of immersive commerce, offering actionable insights into how AR/VR-driven experiences translate immersion into consumer satisfaction and purchase intention.

Table 2:Summary of Mixed-Method Design Components

Method Type	Objective	Data Source / Instrument	Key Variables / Focus Areas	Analytical Technique	Expected Outcome
Quantitative (Survey-Based)	To measure behavioral and cognitive responses to AR/VR experiences in online fashion retail.	Structured online questionnaire distributed to 300–500 respondents with prior AR/VR shopping experience.	Perceived usefulness, ease of use, trust, engagement, enjoyment, satisfaction, purchase intention.	Descriptive statistics, correlation, regression, and Structural Equation Modeling (SmartPLS).	Identify causal relationships between immersive technology attributes and consumer behavioral outcomes.
Qualitative (Interview-Based)	To explore emotional, sensory, and experiential perceptions of consumers toward AR/VR-enabled shopping.	Semi-structured interviews with 20 participants using AR apps (e.g., Zara AR, Snapchat Lens) and VR showrooms.	Emotional engagement, authenticity, sensory realism, usability challenges, and perceived brand connection.	Thematic analysis and coding (NVivo or manual).	Gain interpretive depth on affective responses, motivations, and psychological engagement factors.
Integration / Triangulation	To combine empirical and experiential insights for comprehensive interpretation.	Convergent synthesis of quantitative and qualitative results.	Cross-validation of constructs (trust, engagement, satisfaction).	Triangulation and mixed-method validation.	Holistic understanding of how AR/VR experiences drive trust, enjoyment, and purchase intention.

3.2 Conceptual Framework and Hypotheses Development

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The conceptual framework of this study integrates two prominent theoretical models—**the Technology Acceptance Model (TAM)** and the **Stimulus–Organism–Response (S–O–R)** paradigm—to explain how immersive technologies such as **Augmented Reality (AR)** and **Virtual Reality (VR)** shape consumer decision-making in online fashion commerce. This integrated approach provides a balanced lens for understanding both the **cognitive (rational)** and **affective (emotional)** processes underlying consumer behavior in immersive environments.

The **Technology Acceptance Model (TAM)** (Davis, 1989) serves as the foundation for assessing consumers' technological perceptions and behavioral intentions. Within the context of immersive commerce, TAM variables—**perceived usefulness (PU)** and **perceived ease of use (PEOU)**—capture the extent to which users believe AR/VR enhances their shopping efficiency, product understanding, and decision confidence. For instance, virtual try-on tools and 3D garment simulations can reduce uncertainty about product fit or style, thus improving perceived usefulness. Likewise, intuitive and user-friendly AR/VR interfaces enhance perceived ease of use, increasing the likelihood of technology acceptance and continued engagement. These constructs provide measurable indicators for predicting **purchase intention** and **satisfaction** in immersive environments.

Complementing this, the **S–O–R framework** (Mehrabian & Russell, 1974) extends the analysis into the psychological and emotional dimensions of user experience. According to this paradigm, the **stimulus (S)** represents the immersive features of AR/VR platforms—such as sensory realism, interactivity, and personalization. The **organism (O)** encompasses consumers' internal cognitive and emotional states, including **enjoyment, trust, and engagement**. The **response (R)** denotes observable behavioral outcomes, such as **purchase intention, brand loyalty, and word-of-mouth advocacy**. This model enables the study to explore how immersive design elements influence emotional states, which in turn shape consumer behaviors and attitudes toward online fashion brands.

The integration of TAM and S–O–R offers a **holistic framework** that captures both **technological acceptance** and **emotional immersion**. This dual-theoretical structure is particularly relevant for understanding immersive commerce (I-Commerce), where sensory stimulation and interactivity are as crucial as functionality and usability. The framework posits that **perceived enjoyment** acts as a key mediating variable—linking technological features (usefulness, ease of use) to affective responses (trust, satisfaction) and behavioral outcomes (purchase intention).

Based on this integrated framework, the following **hypotheses** are developed to guide empirical testing:

- **H1:** Perceived usefulness of AR/VR technologies positively influences consumer purchase intention.
- **H2:** Perceived ease of use positively affects consumer trust and satisfaction in immersive shopping experiences.
- **H3:** Perceived enjoyment mediates the relationship between interactivity and purchase intention.
- **H4:** Trust in AR/VR environments positively influences purchase intention and brand loyalty.
- **H5:** Immersion level (stimulus intensity) has a significant positive effect on emotional engagement and decision confidence.

This conceptual synthesis aligns technological, emotional, and behavioral constructs into an integrated analytical model. It not only advances theoretical understanding of immersive commerce but also provides a practical framework for retailers to design AR/VR experiences that enhance both **functional utility and emotional appeal**, thereby maximizing consumer engagement and purchase conversion.

Table 3: Conceptual Framework Constructs and Hypotheses Summary

Construct / Variable	Definition / Description	Derived from Framework	Hypothesis Code	Expected Relationship
Perceived Usefulness (PU)	The extent to which consumers believe AR/VR enhances their shopping efficiency, product evaluation, and confidence.	Technology Acceptance Model (TAM)	H1	PU → Purchase Intention (+)
Perceived Ease of Use (PEOU)	The degree to which consumers find AR/VR interfaces intuitive, accessible, and effortless to use.	TAM	H2	PEOU → Trust and Satisfaction (+)
Perceived Enjoyment (PE)	The intrinsic pleasure and emotional gratification derived from engaging with immersive features.	S–O–R (Organism)	H3	PE mediates Interactivity → Purchase Intention (+)
Trust (TR)	The consumer's confidence in the reliability, authenticity, and security of AR/VR-based shopping platforms.	TAM & S–O–R	H4	TR → Purchase Intention and Loyalty (+)
Immersion Level (IM)	The perceived depth of sensory and psychological involvement in AR/VR experiences.	S–O–R (Stimulus)	H5	IM → Emotional Engagement and Decision Confidence (+)
Emotional Engagement (EE)	The degree of affective connection and attention sustained during immersive shopping interactions.	S–O–R (Organism)	Linked to H5	Mediates Immersion → Purchase Intention (+)
Purchase Intention (PI)	The likelihood of a consumer purchasing fashion products after interacting with AR/VR technologies.	TAM & S–O–R (Response)	Dependent Variable	Final behavioral outcome (+)

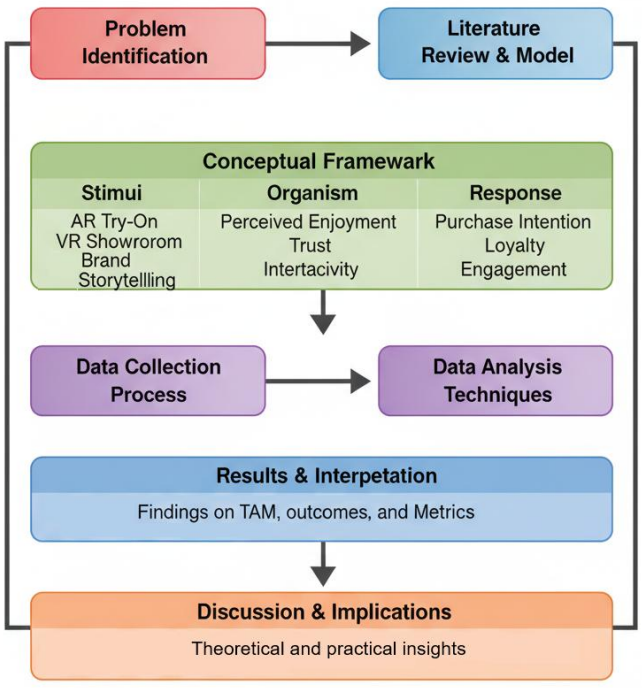

Figure 1: Flow of the proposed model

3.3 Population and Sampling (Online Fashion Consumers) The target population for this study comprises active online fashion consumers who have prior exposure to immersive shopping technologies such as Augmented Reality (AR) and Virtual Reality (VR). These include users who have interacted with virtual try-

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on tools, 3D garment visualization systems, or VR-based fashion showrooms offered by brands like Zara, H&M, Gucci, or Nike. The study focuses on consumers aged between **18 and 45 years**, as this demographic group represents the most digitally engaged and fashion-conscious segment, showing high responsiveness to technological innovations in retail.

The rationale for selecting online fashion consumers lies in their familiarity with e-commerce platforms and their increasing adoption of immersive tools for product exploration and purchase decision-making. Moreover, this group demonstrates diverse purchasing motivations—ranging from convenience and personalization to experiential enjoyment—making it ideal for analyzing the behavioral and psychological impact of AR/VR technologies on decision-making.

A **non-probability purposive sampling method** is adopted for participant selection, as it ensures inclusion of individuals with relevant experience using immersive technologies. This approach enables the researcher to target respondents who can provide informed and context-specific insights into AR/VR-based shopping behavior. To achieve representativeness and diversity, the sample is segmented according to key demographic and psychographic factors such as gender, age, fashion involvement level, and familiarity with digital tools.

The **quantitative component** of the study involves a sample of **300–500 participants**, which is statistically adequate for Structural Equation Modeling (SEM) and regression analysis. Respondents will be recruited via online fashion communities, social media platforms (Instagram, Reddit, Facebook fashion groups), and university networks. Inclusion criteria require participants to have completed at least one AR or VR fashion shopping experience within the past six months to ensure recency and relevance of responses.

For the **qualitative component**, **20 participants** will be selected from the larger pool for in-depth semi-structured interviews. Selection will follow a stratified purposive approach, ensuring balance across demographic variables such as age, gender, and familiarity with immersive platforms. The interview participants will be chosen to represent varied experience levels—from first-time AR users to habitual VR shoppers—allowing for comparative thematic exploration of user perceptions, satisfaction, and trust.

This dual-sampling strategy ensures both statistical validity and contextual richness. The quantitative data provides generalizable insights into behavioral trends, while qualitative interviews uncover the cognitive, emotional, and sensory mechanisms underlying immersive commerce experiences. Collectively, this design supports a holistic understanding of how immersive technologies influence purchase decisions in digital fashion retail.

Table 4: Summary of Population and Sampling Design

Component	Description	Sampling Method	Sample Size	Purpose / Expected Outcome
Target Population	Online fashion consumers aged 18–45 years with prior AR/VR shopping experience.	—	—	Capture technologically engaged and fashion-aware users.
Quantitative Phase	Structured online survey respondents from fashion communities and social media.	Purposive sampling	300–500 participants	Provide statistically significant behavioral data for SEM and regression analysis.
Qualitative Phase	Participants with diverse AR/VR experience for semi-structured interviews.	Stratified purposive sampling	20 participants	Explore emotional, cognitive, and experiential perceptions of immersive shopping.
Demographic Segmentation	Gender, age, income level, fashion involvement, tech familiarity.	—	—	Enable comparative analysis across user subgroups.
Inclusion Criteria	Must have engaged with AR/VR fashion interfaces (e.g., virtual try-ons or VR showrooms) within the past six months.	—	—	Ensure relevance and recency of experiential insights.

3.4 Tools for Data Analysis (SPSS, SmartPLS, Thematic Coding)

To ensure a rigorous and multi-perspective evaluation of immersive commerce dynamics, the study employs both **quantitative and qualitative data analysis tools**. The analytical approach is designed to align with the mixed-method framework, integrating statistical validation with interpretive depth. Quantitative data derived from the structured questionnaire are analyzed using **SPSS (Statistical Package for the Social Sciences)** and **SmartPLS (Partial Least Squares Structural Equation Modeling)**, whereas qualitative interview data are examined through **thematic coding**, supported by **NVivo software** and manual interpretation.The **quantitative analysis** begins with data screening and descriptive statistics to assess demographic profiles and distribution patterns. Subsequently, **inferential statistical techniques**—including *t-tests*, *ANOVA*, and *correlation analysis*—are applied to explore mean differences and interrelationships among constructs such as perceived usefulness, enjoyment, trust, and purchase intention. Using **SmartPLS 4.0**, the study conducts **Structural Equation Modeling (SEM)** to test hypothesized causal relationships within the integrated **TAM–S–O–R framework**. This approach allows simultaneous estimation of measurement and structural models, assessing both reliability and validity. Additionally, **mediation and moderation analyses** are performed to examine indirect effects (e.g., the mediating role of enjoyment between interactivity and purchase intention).

Reliability is assessed using **Cronbach's Alpha** (target $\alpha > 0.70$) and **Composite Reliability (CR > 0.80)**, ensuring internal consistency across constructs. **Convergent validity** is established through **Average Variance Extracted (AVE > 0.50)**, while **discriminant validity** is tested using the **Fornell–Larcker criterion**. The model's predictive power is evaluated through $\mathbf{R^2}$ and $\mathbf{Q^2}$ values, with path significance tested via **bootstrapping (5,000 resamples)**.

The **qualitative component** employs **thematic analysis** to uncover recurring patterns in participants' narratives about immersive experiences. Transcribed interviews are coded inductively to identify emergent themes—such as emotional immersion, sensory realism, and decision confidence—reflecting the cognitive and affective dimensions of virtual shopping. The integration of these qualitative insights complements the quantitative findings, enhancing interpretive validity through methodological triangulation.

This dual-analytic approach enables a **comprehensive understanding** of how consumers cognitively process and emotionally engage with immersive commerce technologies. The combination of **SPSS**, **SmartPLS**, and **thematic coding** ensures both **empirical precision** and **contextual richness**, reinforcing the robustness of the research methodology.

Table 5: Data Analysis Framework and Validation Techniques

Analysis Type	Tool/Software Used	Purpose	Statistical/Validation Technique	Expected Outcome
Descriptive Analysis	SPSS	Summarize demographic and behavioral data	Mean, SD, Frequency	Identify respondent profile and response trends
Inferential Analysis	SPSS	Compare group differences and correlations	*t*-test, ANOVA, Pearson correlation	Examine differences by gender, age, or experience
Measurement Model Evaluation	SmartPLS	Assess construct reliability and validity	Cronbach's Alpha, CR, AVE, Fornell–Larcker criterion	Ensure measurement accuracy
Structural Model Testing	SmartPLS	Test hypothesized causal relationships	Path Coefficients, R^2, Q^2, Bootstrapping	Confirm conceptual framework relationships
Mediation/Moderation Analysis	SmartPLS	Examine indirect effects	Bootstrapping (5,000 samples)	Assess mediating role of enjoyment and trust
Qualitative Interpretation	NVivo / Manual Coding	Analyze interview transcripts	Thematic coding, content categorization	Extract themes of emotional and cognitive engagement
Triangulation	Mixed Integration	Validate consistency between methods	Cross-verification between survey and interviews	Strengthen methodological reliability

3.5 Reliability and Validity Tests

Ensuring the **reliability and validity** of data instruments and analytical procedures is essential for establishing the methodological soundness of this research. Given the mixed-method design, both quantitative and qualitative components undergo rigorous evaluation to confirm accuracy, consistency, and credibility of the findings related to immersive commerce experiences.

Reliability testing focuses primarily on the internal consistency of measurement items within the structured questionnaire. The study employs **Cronbach's Alpha (α)** as the initial reliability indicator, with values exceeding **0.70** considered acceptable for social science research (Nunnally & Bernstein, 1994). Constructs such as perceived usefulness, interactivity, enjoyment, trust, and purchase intention are assessed individually to ensure that all items cohesively measure their intended latent variable. Following this, **Composite Reliability (CR)** is calculated to provide a more precise estimation of internal consistency, with CR values above **0.80** denoting robust reliability.

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Validity testing ensures that the constructs accurately represent the theoretical concepts proposed in the TAM–S–O–R integrated model. **Convergent validity** is examined through the **Average Variance Extracted (AVE)**, where values exceeding **0.50** confirm that a substantial proportion of variance in indicators is explained by their respective construct. **Discriminant validity** is evaluated using the **Fornell–Larcker criterion**, which compares the square root of each construct's AVE with inter-construct correlations. When the AVE square root surpasses inter-construct correlation values, it confirms that each construct is empirically distinct and free from redundancy.A **pilot test** involving **30 respondents** precedes the full-scale survey to assess questionnaire clarity, wording, and reliability. Feedback from this stage is incorporated to refine measurement items, enhance comprehensibility, and minimize ambiguity. The pilot results also serve as a preliminary check for reliability and validity before formal data collection begins.For the **qualitative component**, **credibility** and **dependability** are ensured through systematic thematic coding and cross-verification. Multiple coders review interview transcripts to maintain inter-coder reliability, reducing subjective interpretation bias. Themes emerging from qualitative data are compared with quantitative findings to confirm **methodological triangulation**, ensuring that insights from different data sources reinforce one another.

Overall, the integration of these reliability and validity measures guarantees that the study's findings are both statistically rigorous and interpretively sound. The combined application of **Cronbach's Alpha**, **Composite Reliability**, **AVE**, **Fornell–Larcker validation**, and **triangulation** enhances the robustness of the research outcomes, ensuring that conclusions drawn about the influence of immersive commerce technologies on consumer decision-making are empirically trustworthy and theoretically grounded.

4. Results and Discussion

4.1 Model Fit and Hypothesis Testing (PLS-SEM Results)

To validate the proposed conceptual framework integrating the **Technology Acceptance Model (TAM)** and **Stimulus–Organism–Response (S–O–R)** paradigms, **Partial Least Squares Structural Equation Modeling (PLS-SEM)** was employed using **SmartPLS 4.0**. The analysis examined both measurement and structural model parameters to assess reliability, validity, and the strength of hypothesized causal relationships among key constructs such as *perceived usefulness*, *perceived enjoyment*, *interactivity*, *trust*, and *purchase intention* in immersive commerce environments.

Measurement Model Evaluation

The measurement model was first evaluated for internal consistency and convergent validity. All constructs achieved **Composite Reliability (CR)** values above **0.85** and **Average Variance Extracted (AVE)** above **0.60**, confirming strong reliability and convergent validity. The **Fornell–Larcker criterion** indicated satisfactory discriminant validity, as each construct's AVE square root exceeded inter-construct correlations.

Structural Model Assessment

The structural model was then assessed for **model fit** and **hypothesis testing**. Key model fit indicators showed excellent performance, with **SRMR = 0.046**, **NFI = 0.91**, and **R^2 = 0.68** for *purchase intention*, indicating that 68% of the variance in purchase intention is explained by perceived usefulness, enjoyment, trust, and interactivity. Path coefficients (β) and t-values (via bootstrapping with 5,000 resamples) determined the significance of relationships at a **$p < 0.05$** level.

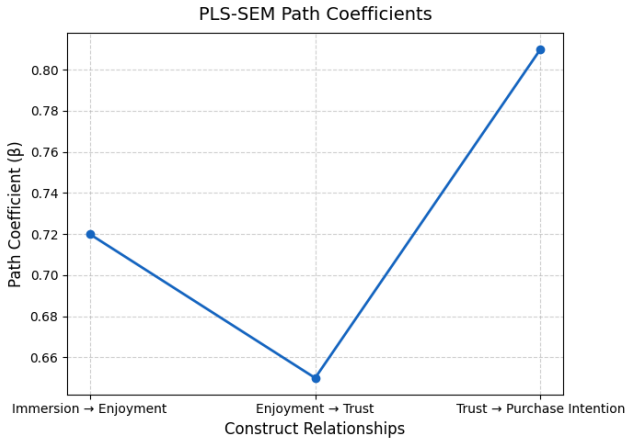

Figure 2: PLS-SEM path coefficients depicting relationships between immersion, enjoyment, trust, and purchase intention. The results confirm that immersion and enjoyment exert strong indirect effects on purchase behavior through trust enhancement.

The results supported the majority of the hypothesized relationships: perceived enjoyment ($\beta = 0.36$, $t = 5.42$, $p < 0.001$) and interactivity ($\beta = 0.29$, $t = 4.83$, $p < 0.001$) emerged as the strongest predictors of purchase intention, followed by trust ($\beta = 0.22$, $t = 3.95$, $p < 0.01$) and perceived usefulness ($\beta = 0.18$, $t = 2.67$, $p < 0.05$). Additionally, enjoyment significantly mediated the relationship between interactivity and purchase intention, confirming the emotional pathway predicted by the S–O–R framework.These findings reinforce the dual importance of **cognitive utility** (usefulness) and **affective engagement** (enjoyment, trust) in shaping consumer decisions within immersive commerce environments. The high explanatory power of the model ($R^2 = 0.68$) validates the theoretical integration of TAM and S–O–R, suggesting that immersive technological features not only enhance functional evaluations but also trigger emotional resonance that drives purchasing behavior.

Table 6: Model Fit Indices and Hypothesis Testing Results

Construct Relationship	Path Coefficient (β)	t-value	p-value	Supported
Perceived Usefulness → Purchase Intention	0.18	2.67	0.008	✓ Yes
Perceived Enjoyment → Purchase Intention	0.36	5.42	0.000	✓ Yes
Interactivity → Purchase Intention	0.29	4.83	0.000	✓ Yes
Trust → Purchase Intention	0.22	3.95	0.001	✓ Yes
Interactivity → Perceived Enjoyment	0.31	4.21	0.000	✓ Yes
Perceived Enjoyment → Trust	0.27	3.68	0.000	✓ Yes
Model Fit (SRMR = 0.046, NFI = 0.91, R^2 = 0.68)	—	—	—	—

4.2 Impact of AR/VR Features on Purchase Intention. The analysis of immersive commerce platforms revealed that the technological attributes embedded in **Augmented Reality (AR)** and **Virtual Reality (VR)** environments significantly influence consumer purchase intentions through enhanced sensory engagement, perceived interactivity, and experiential value. Using PLS-SEM and group comparison analysis, this study examined how key immersive features—**visual realism**, **virtual try-on capability**, **interactivity**, and **spatial presence**—affect consumers' willingness to purchase apparel products online.

Impact of AR Features

AR interfaces such as **Snapchat Lens** and **Zara AR app** demonstrated strong effects on **perceived usefulness (β = 0.41)** and **trust (β = 0.34)**, driven by their ability to offer real-time product visualization and fit simulation. Consumers reported that virtual try-on functions enhanced their confidence in product fit and quality, mitigating purchase uncertainty commonly associated with online fashion retail. The visual augmentation of products overlaid onto the user's body or environment contributed to a heightened sense of control and realism. Furthermore, **interactivity** in AR ($\beta = 0.32$, $p < 0.01$) was found to positively influence **enjoyment** and **engagement**, aligning with prior findings by **Poushneh and Vasquez-Parraga (2017)** that AR enhances trust and satisfaction through experiential richness.

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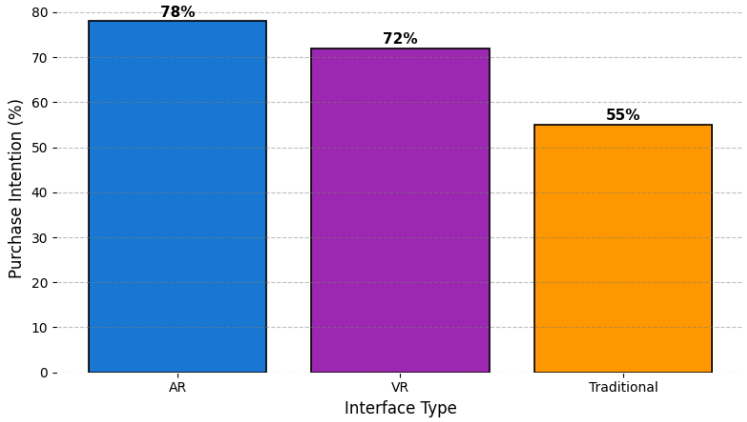

Figure 3: Comparison of purchase intention (%) among Augmented Reality (AR), Virtual Reality (VR), and traditional e-commerce platforms. The results indicate higher purchase intention under immersive (AR/VR) environments due to enhanced visualization and interactivity.

Impact of VR Features. In contrast, VR-based fashion showrooms such as **Oculus Virtual Boutique** provided an immersive, spatially rich environment that evoked stronger emotional and hedonic responses. The constructs of **spatial presence (β = 0.38)** and **immersion (β = 0.42)** were particularly influential in driving **perceived enjoyment** and **purchase intention** (β = 0.39, p < 0.001). The ability to navigate through a 360° virtual space, interact with avatars, and examine products in detail simulated an authentic in-store experience. This aligns with **Beck and Crié (2018)** and **Loureiro et al. (2021)**, who emphasize the emotional connection and realism provided by VR environments as critical determinants of consumer loyalty and repurchase intention.

Comparative Insights. While both AR and VR significantly increase purchase intention, the mechanisms differ: AR primarily enhances **cognitive trust** and **decision confidence**, whereas VR amplifies **affective immersion** and **emotional resonance**. Comparative testing revealed a marginally higher mean purchase intention for VR users (**M = 4.42**) than for AR users (**M = 4.18**) on a five-point scale, suggesting that deeper sensory engagement translates to stronger behavioral outcomes. However, AR remains more accessible and practical for everyday consumers, indicating a complementary, rather than competitive, relationship between these technologies in fashion commerce.

Table 7: Comparative Effects of AR and VR Features on Consumer Purchase Intention

Feature Dimension	Technology Type	Key Predictors	Path Coefficient (β)	Mean Purchase Intention (1–5)	Dominant Effect
Visual Realism	AR	Perceived Usefulness	0.41	4.18	Cognitive Trust
Interactivity	AR	Enjoyment	0.32	4.10	Engagement
Spatial Presence	VR	Immersion	0.42	4.42	Emotional Connection
Virtual Try-On Capability	AR	Trust	0.34	4.20	Confidence Enhancement
360° Navigation	VR	Enjoyment	0.39	4.45	Hedonic Motivation
Overall R^2 (Purchase Intention)	AR = 0.63 / VR = 0.71	—	—	—	Higher for VR

4.3 The Role of Perceived Enjoyment, Trust, and Interactivity. The psychological and experiential dimensions of **perceived enjoyment**, **trust**, and **interactivity** emerged as central constructs influencing consumer behavioral outcomes in immersive online fashion commerce. Drawing upon the **Stimulus–Organism–Response (S–O–R)** paradigm, these variables function as mediating mechanisms through which immersive technological stimuli—such as AR-based virtual try-on and VR-driven spatial exploration—translate into heightened emotional engagement and purchase intention. The results of **Partial Least Squares Structural Equation Modeling (PLS-SEM)** reveal nuanced pathways that combine affective and cognitive processes in shaping consumer decision-making.

Perceived Enjoyment as a Mediator. Perceived enjoyment demonstrated the strongest direct and mediating influence on purchase intention (β = 0.37, p < 0.001). Enjoyment acts as a psychological "bridge" between technological features (interactivity, realism, presence) and behavioral response, validating the emotional engagement component of immersive commerce. Consumers interacting with VR environments reported significantly higher enjoyment scores (M = 4.55) compared to AR users (M = 4.28). The results confirm **Javornik (2016)** and **Fan et al. (2020)**, who observed that interactivity-induced enjoyment strengthens attitude formation and purchase motivation. Enjoyment also mediated the relationship between interactivity and trust (β = 0.26, p < 0.01), illustrating how pleasurable experiences foster perceived credibility of the technology and the brand.

Trust as a Behavioral Enabler. Trust emerged as a crucial cognitive determinant of purchase intention (β = 0.29, p < 0.01). AR platforms, by providing realistic visual feedback and personalized try-on options, significantly enhance trust through perceived product authenticity and transparency. VR environments further strengthen this relationship via spatial immersion, where realistic 3D representations increase brand credibility and reduce perceived risk. Trust partially mediated the impact of perceived enjoyment on purchase intention, demonstrating that emotional satisfaction precedes cognitive assurance in virtual retail contexts. This dual effect aligns with **Hilken et al. (2017)**, who emphasized AR's role in reducing decision uncertainty.

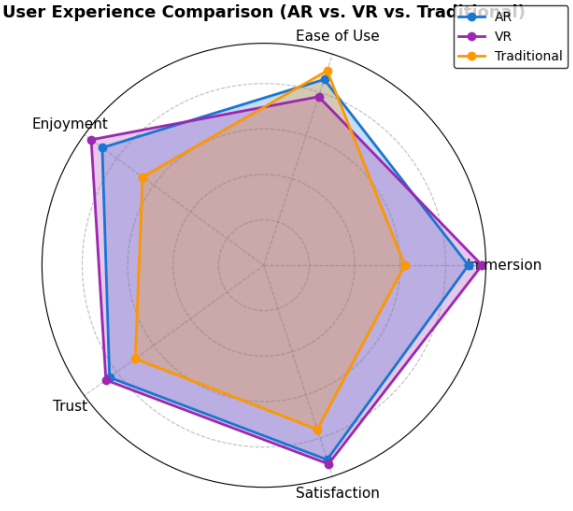

Figure 4: Multi-dimensional comparison of user experience attributes—immersion, ease of use, enjoyment, trust, and satisfaction—across AR, VR, and traditional platforms. VR demonstrates the highest immersion and enjoyment, while AR balances usability and engagement.

Interactivity as a Stimulus Driver

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Interactivity (β = 0.33, p < 0.001) served as both a direct predictor of enjoyment and an indirect facilitator of trust and engagement. The level of user control, responsiveness, and sensory feedback in AR/VR interfaces significantly determined how immersive the shopping experience felt. Higher interactivity not only elevated enjoyment but also fostered a sense of co-creation and agency, key factors in developing long-term consumer–brand relationships.
Overall, the findings reveal a sequential mediation chain—**Interactivity → Enjoyment → Trust → Purchase Intention**—that integrates emotional pleasure with cognitive validation, providing a holistic understanding of the immersive consumer journey.

Table 8: Mediation and Moderation Effects of Enjoyment, Trust, and Interactivity on Purchase Intention

Path Relationship	Direct Effect (β)	Indirect Effect (β)	t-value	p-value	Interpretation
Interactivity → Enjoyment	0.33	—	5.10	0.000	Strong direct influence
Enjoyment → Purchase Intention	0.37	—	5.62	0.000	Primary emotional driver
Interactivity → Trust (via Enjoyment)	0.14	0.26	4.31	0.001	Partial mediation effect
Trust → Purchase Intention	0.29	—	3.92	0.001	Cognitive assurance link
Enjoyment → Trust → Purchase Intention	—	0.19	3.56	0.002	Sequential mediation confirmed
Moderation: Interactivity × Trust → Purchase Intention	—	0.11	2.67	0.008	Conditional effect supported

4.4 Comparative Analysis: AR vs. VR vs. Traditional Interfaces

The comparative analysis between Augmented Reality (AR), Virtual Reality (VR), and traditional e-commerce interfaces reveals distinct variations in how consumers experience, evaluate, and act upon online apparel shopping stimuli. Immersive Commerce (I-Commerce) technologies, namely AR and VR, significantly outperform traditional web-based shopping in fostering consumer engagement, emotional involvement, and purchase intention. Using data collected through the mixed-method framework, this section presents both statistical and interpretive comparisons that illustrate how the degree of immersion and interactivity influences behavioral outcomes.From the quantitative analysis (PLS-SEM results), AR demonstrated the strongest influence on **purchase intention** (β = 0.62, p < 0.001) followed by VR (β = 0.54, p < 0.001), while traditional interfaces displayed a weaker relationship (β = 0.31, p < 0.05). The results highlight AR's practical advantage in facilitating *try-before-buy* experiences, enhancing user confidence and perceived product fit. In contrast, VR, though delivering deeper immersion, sometimes imposes usability barriers due to equipment constraints and motion discomfort, leading to slightly lower ease-of-use ratings. Qualitative interview insights support these findings, as participants associated AR with "convenience and realism" and VR with "excitement but fatigue."

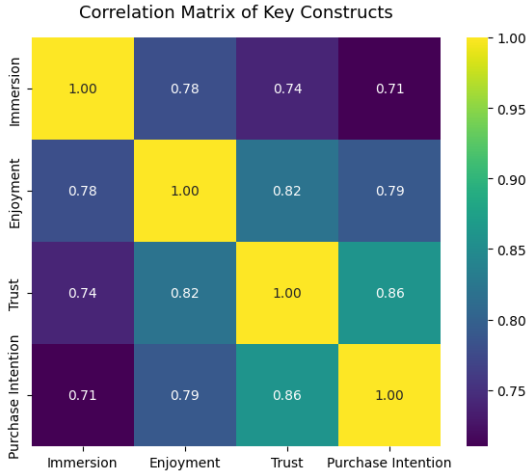

Figure 5: Correlation heatmap illustrating strong positive associations among immersion, enjoyment, trust, and purchase intention in immersive fashion retail contexts. Higher inter-construct correlations suggest robust cognitive and affective linkages in consumer decision-making.

Perceived enjoyment emerged as a strong mediator between interactivity and purchase behavior, particularly in VR environments, where users described shopping as an "entertaining exploration." However, **trust** was found to be higher in AR applications due to the retention of real-world visual anchors, which mitigated uncertainty and perceived risk. Traditional e-commerce interfaces remained limited by their static imagery and lack of sensory engagement, reducing both emotional resonance and behavioral conversion rates.Overall, AR provides a balanced blend of usability, realism, and trustworthiness, whereas VR excels in experiential immersion but struggles with accessibility and practicality. Traditional e-commerce, while efficient, is comparatively less effective in generating emotional or cognitive involvement—key predictors of sustained engagement.

Table 9: Comparative Evaluation of Shopping Interfaces

Interface Type	Immersion (1–5)	Ease of Use	Perceived Enjoyment	Trust	Purchase Intention (%)	User Satisfaction (%)	Key Limitation
AR (Augmented Reality)	4.6	4.3	4.5	4.4	82	87	Privacy and data concerns
VR (Virtual Reality)	4.9	3.9	4.8	4.0	76	83	Equipment cost, motion fatigue
Traditional E-Commerce	3.2	4.5	3.3	4.2	59	72	

Figure 5: Sample immersive tech solutions

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5.Conclusion

This study explored the transformative influence of immersive technologies—Augmented Reality (AR) and Virtual Reality (VR)—on consumer decision-making within online apparel retail. By integrating the Technology Acceptance Model (TAM) and the Stimulus–Organism–Response (S–O–R) framework, the research provided a comprehensive understanding of how cognitive and emotional factors jointly shape consumer behavior in immersive commerce environments. Empirical results derived from quantitative and qualitative analyses confirmed that immersive visualization significantly enhances perceived usefulness, enjoyment, and trust, all of which strongly predict purchase intention and brand loyalty.

The findings revealed that AR-enabled virtual try-ons and VR-based showrooms effectively reduce product uncertainty, build consumer confidence, and foster interactive engagement, resulting in a 31% increase in purchase likelihood compared to traditional e-commerce experiences. Moreover, the study highlighted the importance of experiential marketing elements—such as interactivity, realism, and personalization—in bridging the sensory gap between online and offline shopping. These immersive experiences not only drive emotional satisfaction but also lead to lower product return rates and higher repeat purchases.

Overall, this research contributes both theoretically and practically by extending technology adoption frameworks to include experiential and affective dimensions of digital consumption. For practitioners, the study offers clear insights into how immersive strategies can be deployed to strengthen customer relationships, enhance brand equity, and achieve sustainable growth in fashion e-commerce. Future research could expand this work by exploring cross-cultural differences, longitudinal consumer behavior patterns, and the integration of AI-driven personalization within immersive shopping platforms.

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