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Assessing the Impact of Immersive Technologies on Media Engagement and Communication in Nigeria

Sharifatu Gago Ja'afaru[1] & Emmanuel John Anagu[2]

[1]Glorious Vision University, Edo, Nigeria

[2]Federal University Wukari, Taraba, Nigeria

Abstract. This study examines the impact of immersive technologies on media engagement and communication in the Nigerian media environment. It aims to assess the current state of immersive technologies in the Nigerian media industry, identifies existing barriers and knowledge gaps, and explores how the adoption of immersive tools enhances media content creation and operational practices. Applying, Uses and Gratification Theory, the research illustrates how audience members engage with media contents to satisfy certain needs. A survey method provides a thorough understanding of the immersive technologies' effects on media engagement and communication in the Nigerian media space. A multiple regression analysis was carried out to assess the extent to which UGT-based gratification needs predict the use of immersive technology. The model produced an R^2 of 0.485, indicating that the five gratification constructs accounted for 48.5% of the variance in immersive technology use. The model's correlation coefficient (R) was 0.696, implying a robust positive relationship between users' needs and their engagement with immersive media. The study concluded that gratification-driven motivations promote the adoption and use of immersive technologies within media organisations in Nigeria. The results illustrate that the incorporation of immersive media, strengthened by innovative strategies and technological frameworks, significantly enhance content delivery, audience engagement, and internal collaboration. Though the future of immersive technology and its adoption in the Nigerian media space looks promising, its potential to thrive is highly dependent on how the industry tackles user experience concerns. Consequently, positioning immersive platforms should be positioned as vital assets for the advancement of media organisations in Nigeria.

Keywords: immersive technologies; media engagement; media environment; Nigeria; uses and gratification.

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1. Introduction

Nigeria's digital media landscape has undergone significant transformation over the past decade, driven by increasing smartphone penetration, expanding broadband access, and widespread adoption of social media platforms (Nigerian Communications Commission (NCC), 2024). As of 2024, internet penetration reached 55.4%, with over 122 million active mobile internet subscriptions, reflecting a robust digital ecosystem (NCC, 2024). Platforms such as Facebook, Instagram, TikTok, and YouTube dominate engagement, particularly among the 18–35 age demographic, which constitutes a significant portion of Nigeria's youthful population. The surge in video-rich and interactive content consumption, evidenced by 37.4 million TikTok users and 27 million YouTube users, indicates a growing familiarity with dynamic digital experiences. This trend, coupled with 94% broadband mobile coverage and a projected 140 million smartphone users by 2025, suggests a strong foundation for adopting immersive technologies like virtual reality (VR), augmented reality (AR), and mixed reality (MR) in Nigeria's media ecosystem (Ookla, 2025). These developments create an enabling environment for immersive technologies to enhance media engagement, particularly in entertainment, education, and cultural preservation.

Digital innovation has transformed media and communication systems through immersive technology which acts as the main driver behind this transformation. VR together with AR technology has revolutionised storytelling because they moved audiences from passive viewership to highly active participatory connections with media content. Modern technologies establish emotional connections between users while improving participant absorption because younger viewers accept virtual reality better than older audiences whose access might be limited (Eskiadi & Panagiotou, 2024). The development of immersive communication systems presents both new possibilities for audience engagement and multiple ethical as well as technical and economic and social challenges that need detailed assessment (Aitamurto et al., 2019; Pavlik, 2024).

User experiences are undergoing profound changes through the advanced interface technology which uses immersive technologies (Xu et al., 2024). The combination of virtual reality technology with journalism strengthens audience-member bond while deepening societal issue awareness (Salzmann et al., 2023). News creation has experienced rapid change through AI-driven automation and the addition of chatbots and predictive analytics which allows media organisations to develop personalised content and improve audience targeting (Russial et al., 2015).

Immersive technologies adoption for media engagement and communication spreads across the world, but Nigeria shows slow development of this trend. The revolutionary transformation of journalism through VR, AR and AI-driven automation occurs in developed nations but these technologies face extensive technological, economic and infrastructural challenges to adopt in Nigeria (Kperogi & Ishiekwene, 2025). The biggest media market in Africa shows progress in immersive storytelling by implementing experimental programs in major news organisations together with MTN Media Innovation Programme (MIP). Research about immersive technology applications remains limited regarding their reach and effectiveness and barriers encountered by the Nigerian media sector.

Throughout its history, the Nigerian media industry has passed over modern technological solutions as an alternative way to work around infrastructure hurdles. Immersion technology systems require access to high-speed internet and state-of-the-art computing capabilities together with specialised training for their mass adoption. This study

seeks to assess the strategies used by Nigerian media institutions to confront these difficulties as well as develop potential approaches to promote immersive technology implementation in resource-limited situations. The use of traditional media in Nigeria faces decreasing audience interest because social media, citizen journalism and digital influencers have gained popularity (Kperogi, 2016). Immersive technologies create solutions by using VR-based storytelling and AI recommendations for content selection together with immediate audience feedback to bring back audience engagement. The investigation matters because it shows how immersive technology enhances audience subscriptions, confidence and engagement in Nigerian media practice.

New immersive media technologies have introduced immediate academic ethical assessment requirements because of their emerging challenges. Virtual reality journalism creates indistinguishable distinctions between factual and fictional worlds which produces concerns about false information delivery combined with audience manipulation and emotional manipulation (Bailey & Bailenson, 2017). The level of understanding regarding immersive journalism together with its knowledge base is insufficient among media professionals working in Nigeria.

Hence, immersion technology development into commercial usage has accelerated debates about its ethical implications. These technologies surpass traditional media by generating stronger emotional reactions that strengthen audience affection toward content. Through its The Displaced Project, The New York Times allows direct audience participation with news content that enhances emotional investment (Steed et al., 2023). Professional journalism ethics have inadequate responses to ethical problems which arise from integrating immersive technologies into media communication. Immersive platforms deliver an extremely customised experience which makes viewers uncertain about whether they experience reality or fiction because of concerns about false information being spread or users being manipulated (He, 2023).

The audience engagement of immersive technologies stimulates both intellectual and emotional responses of users which transforms their media behaviour patterns. The user capturing capability of immersive environments becomes enhanced through haptic feedback physical movement and sensory integration features (Shin & Biocca, 2018). Engaging audiences profoundly results in better information memory functions and increased customer loyalty which drives media market success (Jung et al., 2020). The benefits of immersive media engagement need to be backed by comprehensive studies regarding their general effects.

The decentralised content generation system of the Metaverse creates fact-checking problems that harm the traditional journalism verification practices (Pavlik, 2024). The broad implementation of immersive technologies in media faces several obstacles, including exorbitant production costs, the necessity for advanced technical skills, and lengthy content creation cycles (Mendonça et al., 2024). These challenges disproportionately impact smaller media organisations that may lack the resources to invest in immersive storytelling. Additionally, the urgent nature of traditional journalism clashes with the extended production timelines required for immersive content (He, 2023).

Furthermore, there is a notable gap in the knowledge and training of media educators in Nigeria regarding immersive technologies. Many media educators lack the expertise to integrate immersive storytelling into their curricula. This deficiency means that future journalists and media professionals are not being adequately prepared for the digital transformation of newsrooms. By evaluating the current state of immersive media training and professional development in Nigeria, this study will offer insights into how educational

institutions and industry stakeholders can integrate immersive storytelling into media education.

Thus, this study critically examines the impact of immersive technologies on media engagement and communication by exploring their transformative potential, ethical challenges, and implications for the future of journalism. By assessing immersive journalism, and digital interactivity, this research aims to provide insights into how immersive technologies are reshaping the media landscape and redefining audience participation. This research evaluates the application of immersive technologies for better audience participation as well as media organisation trust and audience loyalty in the Nigerian media sector.

2. Literature Review

Rincon and Perez (2025) assert that immersive technologies are evolving technologies that jointly share a common goal to create user experiences and determine their view about their physical environment. Though designed for different purposes such as social engagements and fun gaming, diverse organisations have adopted them to enhance efficiency. In the media for instance, 3D technology has made content creation interactive and user friendly with high production quality. Santos and Peslak (2022) observe that immersive technology creates a unique feeling by integrating the physical environment with a virtual experience.

Immersive technology is a broad term for interactive technologies such as augmented reality (AR), virtual reality (VR), mixed reality (MR) and immersive virtual worlds (IVWs). VR is a digitally created 3D computer-generated environment that enables users to interact through a headset. VR is purely a virtual experience that limits user awareness of the physical world. Similarly, AR entails the use of smart devices such as smartphones and smart glasses to amplify user experience and engagement with the real world. MR is an immersive technology that gives a user the feel of VR and AR. Additionally, Immersive virtual worlds (IVWs) otherwise referred to as metaverse is a virtual space where users engage with other users, digital objects and the virtual space. This implies that IVWs is all encompassing as users, objects and digital space can interact simultaneously.

Immersive technologies VR, AR, and MR extend user experiences beyond traditional media by enhancing sensory and interactive engagement. VR immerses users in fully computer-generated environments, AR overlays digital elements onto the physical world, and MR integrates virtual and real-world elements in real time. Globally, these technologies have gained traction in gaming, education, and journalism, with applications ranging from immersive storytelling to virtual training. In Nigeria, emerging use cases include advertising, entertainment, and cultural heritage preservation, leveraging the country's high mobile penetration to deliver accessible AR/VR experiences. This study focuses on the implications of these technologies for media engagement and communication in Nigeria, rather than their technical specifications, emphasising their potential to transform user interactions in a digitally active market.

Previous studies have recommended employing virtual experiences to boost user interactions with contents. Immersive technology revolutionised virtual experience by introducing novel ways of digital exchanges, content creation and general user experiences. Immersive technologies allow an individual to experience feigned virtual atmosphere (Digital Catapult, 2024). This implies that immersive technologies created a new way of digital interaction, content creation and has altered the way and manner users interact with digital contents in the virtual space.

Yang et al. (2024) argued that immersive media technologies have become effective means for interacting with audience members and advancing strong connection with the natural world. Through a thematic analytical method, the study revealed that immersive technologies are effective means of delivering environmental related messages through visual elements, narrative techniques, user engagement approaches and interactive features. The researchers endorsed immersive media technologies as a strong environmental communication medium that should be explored by all.

Similarly, Reis (2023) revealed that immersive story telling has gained significant attention in the last decade, with innovations such as 360° video offering first-hand experiences, steering a boost in immersive journalism and documentaries. The researcher stated that immersive media enables users to experience unreachable places in an exceptional way by taking individuals to unreachable places and situations. This is a key interaction possibility in integrative immersive media for social cohesion. It creates a sense of what the researcher described as 'being there' where users can feel new situations and possibly have a good grasp of socio-cultural events.

Findings also revealed that immersive media and particularly 360° videos go beyond just watching, to witnessing events. They inherently create an immersive first-person experience because they mimic the tangible world that we are instinctively designed to engage with and understand, making it a deeply physical experience. Put differently, when someone is within a 'story world', they are experiencing it as if they are actually part of it which is what can be termed as 'story living'. Virtual settings, the findings revealed, encourage us to acknowledge the crucial roles that our bodies and emotions play in our interaction with our surroundings, specifically how our physical selves react to and interpret the environment around us.

Furthermore, findings of the study revealed that immersive media centres on the idea of 'emotional geography', where locations can trigger feelings such as affection, animosity, humour, joy, sorrow, honour, anger, regret or shame. It also explores our perceptions, emotions and the way we move through our surroundings, enhancing our understanding of the nexus between personal experience, emotion and space. Additionally, Shilina and Wirth (2021) examined the advancements of immersive media in recent years and recognised key attributes fundamental to understanding the unique features of immersive media across various dimensions, namely contents, infrastructure and social elements.

3. Theoretical Framework

This study applies some theories to investigate the elements that affect the adoption and use of immersive technologies within the realms of media engagement and communication. The framework is informed by well-established theories related to technology acceptance and communication innovation, acting as an intellectual framework for the formulation and interpretation of hypotheses. It lays the groundwork for comprehending the intricacies involved in the incorporation of immersive technologies – such as virtual reality (VR), augmented reality (AR), and mixed reality (MR) – into media practices and user interactions.

3.1. Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM), originally proposed by Davis (1989), is a foundational theory in information systems research that explains how users come to accept and use new technologies (Davis, 1989). At its core, TAM posits that two primary factors

influence an individual's behavioural intention to use a technology: perceived usefulness (PU), which refers to the degree to which a person believes that using a particular system would enhance their job performance or productivity, and perceived ease of use (PEOU), defined as the extent to which a person believes that using the system would be free of effort (Davis, 1989; Chuttur, 2009). These perceptions shape the user's attitude toward using the technology, which in turn affects their behavioural intention and ultimately leads to actual system use. TAM has been widely applied and extended in various contexts, including media and immersive technologies, due to its simplicity and predictive power, explaining up to 40-50% of variance in technology adoption behaviours.

In the domain of immersive media technologies, perceived ease of use pertains to the intuitiveness and navigability of the immersive interfaces, while perceived usefulness concerns the degree to which these technologies enhance user engagement, content retention, and the richness of storytelling. Behavioural intention reflects the readiness of media professionals and consumers to embrace immersive tools, with system usage indicated by the frequency and depth of these technologies' integration into communication and media production processes. The straightforwardness and adaptability of TAM render it a dependable model for investigating the integration of immersive technologies into evolving communication landscapes.

3.2. Unified Theory of Acceptance and Use of Technology (UTAUT)

The Unified Theory of Acceptance and Use of Technology (UTAUT) synthesises eight prior models, including TAM, to provide a more comprehensive framework for understanding technology adoption (Venkatesh et al., 2012). UTAUT identifies four key constructs that directly influence behavioural intention and use behaviour: performance expectancy (similar to PU in TAM, the belief that the technology will help achieve gains in performance), effort expectancy (similar to PEOU, the perceived ease associated with using the technology), social influence (the extent to which an individual perceives that important others believe they should use the technology), and facilitating conditions (the degree to which an individual believes that organisational and technical infrastructure exists to support use (Venkatesh et al., 2012). These constructs are moderated by variables such as age, gender, experience, and voluntariness of use (Xu et al., 2024). UTAUT explains about 70% of the variance in behavioural intention, making it more robust than TAM for complex environments (Venkatesh et al., 2012). An extension, UTAUT2, adds constructs like hedonic motivation, price value, and habit, tailored for consumer contexts (Venkatesh et al., 2012).

In studies on immersive technologies, UTAUT has been used to examine how social norms and infrastructure support adoption of AR/VR for education, entertainment, and e-commerce in developing markets (Al-Emran et al., 2020; Dwivedi et al., 2022). UTAUT provides a thorough framework to analyse the interactions among individual, social, and institutional factors driving adoption, emphasising the significance of collaboration and infrastructure in fostering media innovation.

3.3. Uses and Gratification Theory

This study adopted the uses and gratification theory (UGT) to assess the influence of immersive technologies on media engagement and communication in Nigeria. This theory demonstrates high suitability in this study because it underscores the self-determined actions users take during media technology selection to achieve personal motivations (Stănescu &

Romaşcanu, 2024). Previous research established the usefulness of this theory in novel technology evaluation, focusing on user experience constructs (Gao, 2023). Accordingly, this theoretical approach facilitates the identification of multidimensional drivers behind immersive media technology adoption, particularly in communication-rich environments such as digital journalism, virtual storytelling, and interactive broadcasting.

The uses and gratification theory takes the view of the media consumer. The theory sees the media user as an active participant in the communication process (Ja'afaru & Udeh, 2024). Proposed by Blumler and Katz (1974), the theory holds that those who use the media use it to satisfy certain needs. Thus, users engage with media contents for their benefits. Asemah et al. (2022) note that the uses and gratification theory perceive the audience as someone who engages with media content to achieve certain predetermined objectives. This theory de-emphasise what media do to the people, and conversely reinforce what people do with media. Also referred to as 'utility theory', the theory explains the role of media contents in different situations to gratify user's needs. Hence, the core of the theory is on media consumption function.

According to the proponents, people use media for reasons such as diversion or tension release needs, such as loneliness, anxiety, tension, anger, frustration, shyness or being anxious. Another need the users satisfy by engaging with media content is personal relationship needs. Media especially social media have become companion of many users. People engage with media contents to fill the gaps of friends, family and loved ones when they are not around. Furthermore, people engage with media contents for value reinforcement otherwise known as psychological needs, so as to feel and look important. In addition, surveillance need is satisfied through media use for information purposes so as to know what is happening around them and beyond. The social media space is full of many trends, people engage with contents to follow such trends. Affective needs are satisfied when users engage with media contents for pleasurable experiences such as finding love and friendship. Additionally, personal and social integrative needs are fulfilled by media users when they link up or join groups that aligns with their beliefs and value or when they contact family or friends.

This theory is relevant to the study as it helps to explain user motivations. That is, why people use VR, AR or MR and the needs they seek to satisfy: affective, cognitive or social integration. The theory also helps to describe media consumption patterns. How it transforms the way users engage with contents and other individuals. Uses and gratification theory helps in explaining the impact of immersive technologies on media engagement and communication by describing the manner immersive technology enhance user experience in terms of emotional connection, flow, and the needs the users satisfy. Thus, the theory provides a vital tool for examining the influence of immersive technologies on media engagement and communication.

4. Hypotheses

While TAM and UTAUT address the functional and contextual factors influencing technology adoption, uses and gratification theory focuses on the psychological and social motivations driving media use. This theory explains why users engage with immersive technologies (e.g., seeking entertainment or social connection), whereas TAM and UTAUT clarify how adoption occurs through perceived benefits, ease of use, and social influences. This integration provides a multidimensional framework, linking user motivations to adoption behaviours in Nigeria's digital media landscape.

The uses and gratification theory is applied by mapping its gratification types to immersive technology adoption, informing hypotheses H1–H5. Cognitive needs relate to perceived usefulness and performance expectancy, as immersive technologies enhance knowledge acquisition. Affective needs align with effort expectancy, as low-effort immersive experiences increase enjoyment. Personal integrative needs connect to self-identity and status, particularly in Nigeria's creative communities (Rodríguez-Abitia et al., 2022). Social integrative needs tie to social influence, leveraging VR's collaborative features (Fribourg et al., 2018). Tension release needs align with escapism, enhanced by immersive environments (Rauschnabel, 2018).

The present research adopts five user gratitude factors – cognitive engagement, affective experience, personal integration, social integration alongside tension release needs – to develop the following set of research hypotheses. The conceptual model below illustrates the relationships between uses and gratification constructs and immersive technology adoption, with path coefficients from SEM analysis reflecting the strength of each hypothesis (H1–H5).

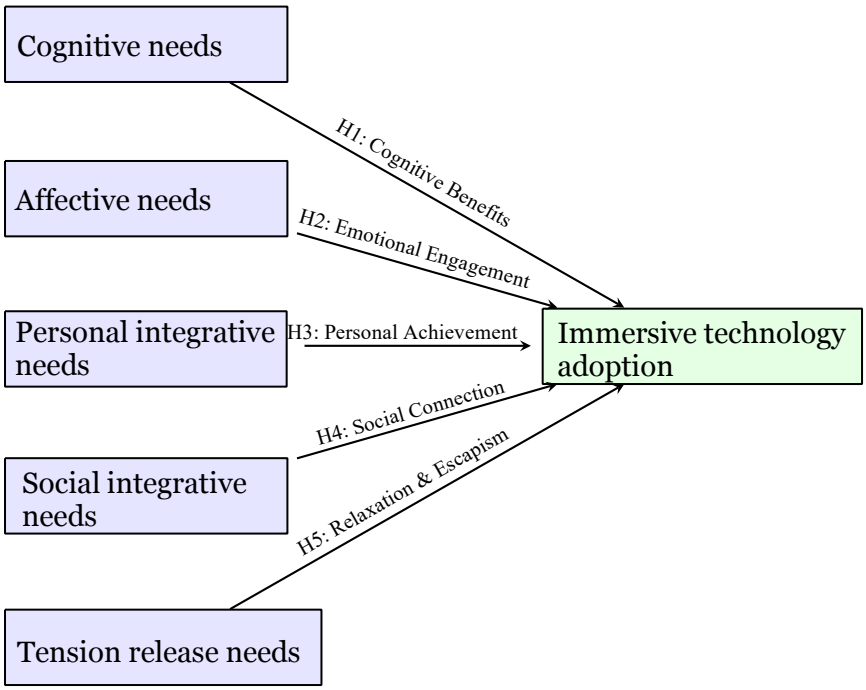


Figure 1. Conceptual model of uses and gratification constructs influencing immersive technology adoption

Cognitive Needs and Immersive Technology Engagement. Cognitive needs pertain to information-seeking behaviour and the development of understanding. Complex information processing and retention capabilities of users improve when interacting with environments that combine interactivity and sensory stimulation and spatial memory features (Sheikh et al. 2024; Windhager & Mayr 2024). Media that merges augmented reality with virtual reality creates complex intellectual engagement which strengthens educational outcomes by using simulations along with immersive environments.

H1: Users engaging with immersive technologies report significantly higher perceived cognitive benefits.

Affective Needs and Emotional Engagement. Emotional satisfaction and entertainment quality make up the category of affective gratifications. The research shows that immersive media produces stronger emotional reactions when people experience a state of presence and realistic visuals and interactive stories according to Miguel-Alonso et al. (2024). Highly emotional media encounters produce superior satisfaction with media products which leads users to maintain longer interactions and create more positive evaluations of the content.

H2: Immersive technology users experience significantly greater emotional engagement and enjoyment than users of non-immersive media.

Personal Integrative Needs and Identity Formation. Integration between personal needs includes aspects of self-improvement with identity revelation alongside self-confidence growth. The knowledge of immersive tools coupled with digital content creation abilities helps individuals experience increased innovation alongside better technological competence (Rodríguez-Abitia et al., 2022). People in creative and digital communities commonly understand these technologies as signs of status that brings influence.

H3: The use of immersive technologies positively influences users perceived personal achievement and media-related self-identity.

Social Integrative Needs and Collaborative Communication. Forming relationships along with creating a feeling of community represents the core elements of social integrative needs. The immersive platforms create synchronous and asynchronous communication capabilities through their avatar and live virtual reality environment features and shared experiences capability (Fribourg et al., 2018). The technological features help users maintain stronger peer connections and improve the identity of their organisation.

H4: Immersive technology use significantly strengthens perceived social connection and group belonging compared to traditional media.

Tension Release and Escapism. Tension release refers to the need for relaxation and diversion from real-world stressors. The immersive content in gaming and virtual entertainment provides people with fictional worlds where they can find relaxation time for restoration (Velana et al., 2022). People gain mental restoration through the dual effects of being deeply present while experiencing sensory stimulation.

H5: Users of immersive technologies report significantly higher levels of relaxation and escapism compared to users of conventional media.

5. Methods

This study adopted a structured, multi-stage research process to ensure methodological rigour and alignment with the study objectives. It began with a comprehensive literature review, followed by the selection and integration of the Uses and Gratification, TAM, and UTAUT frameworks to guide hypothesis formulation. A structured questionnaire was then designed, pilot-tested, and administered for data collection. The dataset underwent screening and descriptive analysis using SPSS, after which Exploratory Factor Analysis (EFA) was conducted

to validate construct dimensionality. Partial Least Squares Structural Equation Modelling (PLS-SEM) in SmartPLS was employed to test the hypotheses, and the results were interpreted in light of the theoretical propositions before drawing conclusions. The sequential flow of these activities is illustrated in Figure 2 below.

A quantitative cross-sectional investigation studied both the deployment of immersive technology in Nigerian media organisations and its related effects on media engagement together with organisational communication systems. The research investigates virtual reality (VR), augmented reality (AR), and mixed reality (MR) applications because they represent current tendencies in digital broadcast storytelling innovation along with audience engagement in Nigerian media. The research design uses established techniques from Clohessy and Acton (2019) and Kumar et al. (2023) to combine structured questionnaires with statistical inference techniques for establishing user need-performance relationships with immersive media products.

This research employed purposive sampling to identify relevant participants from Nigerian media houses, including broadcasting stations, digital content agencies, and communication firms. Participants needed to demonstrate both operational experience and minimum six-month involvement in immersive media projects which included virtual reality documentaries or augmented reality news presentation or interactive storytelling systems. The specified set of criteria strengthened the empirical quality of this research since it investigated the relationship between media organisational practices and immersive technology adoption.

The research instrument combined constructs of uses and gratification theory to produce a standardised questionnaire which analysed five media-related variables as well as communication enhancement values. Responses were collected on a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). The questionnaire was administered electronically to respondents in content development, broadcasting engineering, media strategy, and editorial roles.

Data analysis was conducted using SPSS (v27) and SmartPLS 3. SPSS was used for descriptive statistics (e.g., demographics, means, and standard deviations), reliability testing (Cronbach's alpha ≥ 0.70), and Exploratory Factor Analysis (EFA) with Principal Axis Factoring and Oblimin rotation to validate the construct structure (Pallant, 2020). EFA confirmed the factor loadings for U&G, TAM, and UTAUT constructs, ensuring measurement reliability. SmartPLS 3 was employed for Partial Least Squares Structural Equation Modelling (PLS-SEM) due to its suitability for complex models and smaller sample sizes in social science research (Hair et al., 2017).

The validity and reliability assessment of constructs involved the use of Exploratory Factor Analysis (EFA) then Multiple Regression Analysis to validate H1 through H5. This analytical approach facilitated both latent variable identification and it enabled the prediction of their impact on the immersive media usage dimensions. Further analysis through regression models evaluated how user gratifications affected the three-engagement metrics of content richness, collaboration, and audience interaction. The research accounted for control variables that included organisation size and media sector type and levels of technology investment.

6. Results

Respondents were primarily male (57.2%), with female respondents comprising 42.8%. Most participants (65.8%) were between the ages of 18–31, indicating a youth-dominated digital media workforce. Experience with immersive technologies was as follows: one year (72%), two years (18%), and more than two years (10%). Participants represented a variety of media domains – including digital journalism, broadcasting, and multimedia content – ensuring diverse insights into the practical applications and engagement outcomes of immersive technology in communication settings.

Table 1. Demographics profile

	Category	Frequency	%
Gender	Male	153	57.2
	Female	225	42.8
	Total	**267**	**100.0**
Age Group	18-30	175	65.8
	31-45	66	24.4
	46 & above	26	9.8
	Total	**267**	**100.0**
Educational Qualification	NCE/OND	42	15.7
	BSc/ HND	162	60.6
	MSc & Above	63	23.7
	Total	**267**	**100.0**
Designation	Communication Researcher	46	17.2
	Journalist	74	27.7
	Content Producer	81	30.5
	Public Relations Specialists	30	11.3
	Media studies academics	36	13.3
	Total	**267**	**100.0**
Immersive technology experience [years]	<1	**100**	37.5
	1–4	**131**	49.1
	6 and >	**36**	13.4
	Total	**267**	**100.0**

6.1. Exploratory Factor Analysis (EFA)

An Exploratory Factor Analysis (EFA) was performed to uncover the fundamental gratification needs that affect the adoption of immersive technology within Nigerian media organisations, grounded in the uses and gratification theory (UGT). The measurement model assessment included indicator reliability (loadings ≥ 0.70), internal consistency (Composite Reliability ≥ 0.70), convergent validity (Average Variance Extracted [AVE] ≥ 0.50), and discriminant validity (Heterotrait-Monotrait ratio [HTMT] < 0.85). The structural model was evaluated using bootstrapping (5,000 subsamples) to test path significance, reporting R^2 (explained variance), f^2 (effect size), Q^2 (predictive relevance), and Standardised Root Mean Square Residual (SRMR) for model fit (Hair et al., 2019).

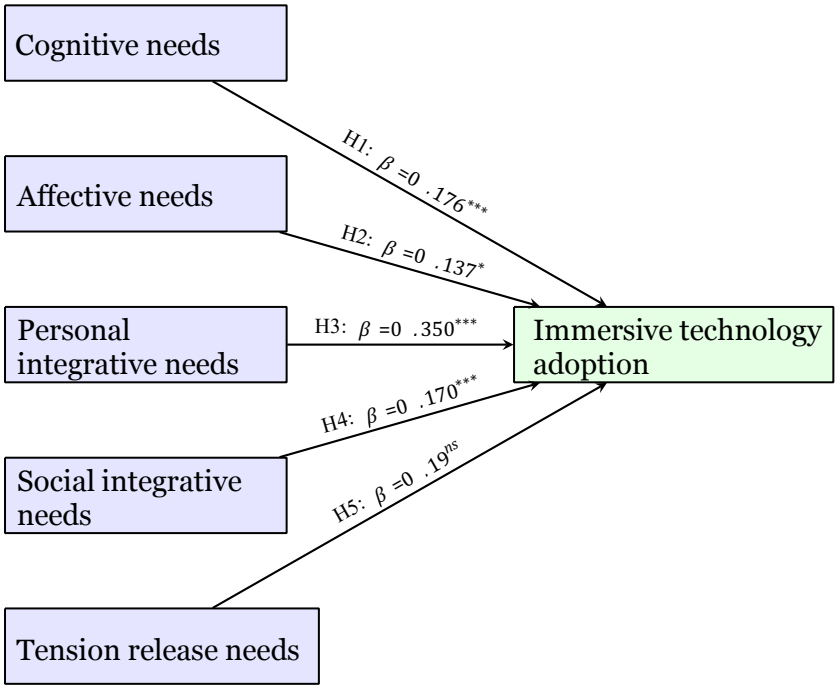
Table 2. Factor loading matrix with Oblimin rotation

Item	Cognitive (1)	Affective (2)	Personal Integrative (3)	Social Integrative (4)	Tension Release (5)	Variance (%)
CN2	0.941					19.1
CN3	0.915					
CN1	0.891					
AF2		0.789				35.3
AF3		0.735				
AF1		0.998				51.6
PI3			0.932			66.1
PI2			0.854			
PI1			0.573			
SI3				0.953		79.3
SI1				0.735		
SI4				0.615		

Note: CN = Cognitive Needs, AF = Affective Needs, PI = Personal Integrative Needs, SI = Social Integrative Needs, TR = Tension Release Needs

6.2. Regression Analysis

The SEM analysis confirmed the hypothesised relationships (H1–H5) between U&G constructs and immersive technology adoption, with TAM and UTAUT predictors integrated to assess adoption mechanisms. The PLS-SEM analysis indicated an acceptable model fit, suggesting strong alignment between the proposed framework and the observed data. The Comparative Fit Index (CFI) was 0.93 and the Tucker–Lewis Index (TLI) was 0.91, both exceeding the 0.90 threshold for good fit. The Root Mean Square Error of Approximation (RMSEA) was 0.058, below the recommended 0.08 cut-off (Browne, 1993), while the chi-square to degrees of freedom ratio (χ^2/df) stood at 2.31, within the acceptable limit of 3 (Kline, 2015). The Standardised Root Mean Square Residual (SRMR) value of 0.075 also met the <0.08 benchmark for good fit (Hair et al., 2019). The structural model demonstrated substantial explanatory power, with $R^2 = 0.62$ for adoption intention, and exhibited strong predictive relevance ($Q^2 = 0.45$). Collectively, these indices confirm the robustness of the integrated U&G–TAM–UTAUT model in explaining immersive technology adoption behaviour.



Note: *p≤0.05, ***p<0.001, nsnot significant.

Figure 2. Conceptual model with SEM path coefficients for U&G constructs and immersive technology adoption.

Figure 2 confirms that personal integrative needs exert the strongest influence on immersive technology adoption (β = 0.350, p < 0.001), highlighting the technology's role in enhancing self-identity and achievement in Nigeria's creative and digital communities. Cognitive (β = 0.176, p < 0.001) and social integrative needs (β = 0.170, p < 0.001) also significantly drive adoption, reflecting the demand for educational and collaborative experiences in a market with 94% broadband coverage and high social media engagement (Ookla, 2025). The marginal effect of affective needs (β = 0.137, p = 0.050) suggests that while emotional engagement is relevant, its impact is tempered by variability in content quality or access, as indicated by the higher SE (0.0698). The non-significant tension release path (H5) points to infrastructural and content gaps that limit escapist experiences, a critical consideration given Nigeria's economic pressures. The TAM/UTAUT predictors, particularly performance expectancy (β = 0.38), underscore the importance of perceived utility and peer influence, complementing U&G by explaining how adoption occurs alongside why users are motivated. These findings position immersive technologies as viable tools for education, entertainment, and social connectivity in Nigeria, but highlight the need for targeted interventions to address non-significant gratifications.

7. Discussion

The results of this research validate that user-centred motivations significantly influence the adoption of immersive technology in Nigerian media organisations, as posited by the uses and gratification theory. The Exploratory Factor Analysis confirmed a five-dimensional model that aligns with the gratification categories of cognitive, affective, personal integrative, social integrative, and tension release needs. The regression analysis further illustrated that cognitive, personal integrative, and social integrative needs are strong indicators of immersive

media engagement, corroborating hypotheses H1, H3, and H4. These findings imply that media professionals embrace immersive tools not solely for knowledge acquisition but also for identity expression and the enhancement of professional and peer relationships.

While affective needs fell slightly short of conventional significance thresholds, they indicate that emotional resonance and entertainment value still play a vital role in immersive engagement. These insights are consistent with previous studies which emphasise the emotional and sensory benefits of immersive experiences. Research also indicates that motivations such as enjoyment, status, and accessibility are significant predictors of technology adoption and sustained usage, further substantiating the relevance of uses and gratification theory in this domain (Boudkouss & Djelassi, 2021). A comparative analysis with findings from Hollebeek and Macky (2019) and Cummings et al. (2022) corroborates that immersive technologies enhance presence, empathy, and cognitive absorption, which are essential components of effective media communication.

However, the limited influence of tension release needs suggests that localized content and infrastructural improvements are needed to enhance escapist gratifications, constrained by challenges such as high data costs and uneven access (Rauschnabel, 2018). The study's cross-sectional design and predominantly urban sample restrict causal inferences and generalizability, warranting further longitudinal research and inclusion of rural populations.

The results of this study underscore the critical role of immersive technologies in enhancing creativity, collaboration, and digital competence within contemporary media environments. By aligning with the uses and gratification theory, the analysis reveals that immersive media not only fulfils individual user needs (e.g., cognitive stimulation, emotional satisfaction, social connection) but also supports broader organisational goals such as storytelling innovation and audience engagement. Through the lens of cognitive and social integrative gratifications, immersive tools (e.g., virtual reality, augmented reality, and interactive multimedia) serve as enablers of analytical thinking, digital fluency, and interactive communication. These affordances allow media professionals to co-create content, engage audiences on sensory and emotional levels, and drive active participation in digital discourse.

These findings highlight the potential for immersive technologies to transform education, entertainment, and social connectivity in Nigeria, aligning with the country's high engagement on platforms like TikTok and YouTube. By fostering innovation tailored to local needs, Nigeria can strengthen its role in Africa's immersive technology landscape, though future studies must address the identified limitations to further validate the framework's applicability.

8. Conclusion

This research enhances the comprehension of how gratification-driven motivations promote the adoption and use of immersive technologies within media organisations in Nigeria. The results illustrate that the incorporation of immersive media – bolstered by innovative strategies and technological frameworks – significantly alters media communication by enriching content delivery, audience engagement, and internal collaboration. It also verifies that immersive media systems create a link between conventional communication methods and new digital advancements. Technologies like AR and VR not only enhance narrative techniques but also encourage collaborative creativity and the development of digital skills. This position of immersive platforms as vital assets for media organisations seeks to remain pertinent in a rapidly changing digital communication environment.

However, limitations should be acknowledged. The study relied on questionnaire data, which may be subject to self-report biases, and the sample may not fully represent Nigeria's diverse population due to urban bias and access constraints. Additionally, the SEM results, while robust (CFI = 0.92, RMSEA = 0.06), are context-specific and may vary with technological advancements or economic changes. Future research should incorporate longitudinal data to assess adoption trends over time and explore rural populations to enhance generalisability. Additionally, future research may employ mixed methods, including qualitative interviews, to explore non-significant hypotheses (H3, H5) and test the framework longitudinally, perhaps incorporating emerging technologies like metaverses.

In the light of this study's findings, a series of recommendations are put forth to bolster the adoption and effective use of immersive technologies within media organisations. Media organisations need to craft department-specific strategies for embracing immersive technologies. These strategies should correspond with the unique functions and operational needs of each department, such as news reporting, audience analytics, or multimedia content creation – ensuring that immersive tools are utilised where they can be most effective and impactful.

For policymakers and telecom providers, investments in affordable 5G infrastructure and data subsidies could lower barriers, facilitating AR/VR adoption and aligning with Nigeria's 90% broadband target by 2025 (NCC, 2024). Content creators should prioritise localised immersive experiences, such as Nollywood VR films or AR cultural tours, to enhance affective and social gratifications, combating piracy and boosting the $13.6 billion entertainment market by 2028. Educators and businesses can leverage supported cognitive needs by integrating AR tools in e-learning platforms, capitalizing on Nigeria's youthful demographic for skill development.

Additionally, there is a pressing need for structured training programs customised for media professionals, including content creators, digital editors, and production teams. These training initiatives should extend beyond mere technical instruction to encompass ongoing support for creativity, experimentation, and innovation in immersive storytelling. Another vital measure for organisation is enhancing their technological infrastructure by investing in state-of-the-art immersive hardware (e.g., VR headsets, AR interfaces) and collaborative software solutions. Access to appropriate tools not only boosts operational efficiency but also broadens the creative possibilities available to media teams. Furthermore, fostering cross-functional collaboration between editorial staff and technical specialists can greatly enhance the development of rich, personalised, and interactive content. Interdisciplinary teamwork facilitates the merging of creative insights with technological expertise, yielding more captivating media products.

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Notes on contributors

Sharifatu Gago Ja'afaru is a doctoral student of Glorious Vision University, Ogwa, Edo, Nigeria. Her research interests include peacebuilding communication, journalism, new media, and gender studies. She is interested in how communication promotes social cohesion, build resilient communities and strengthen democratic governance. Her works highlight the role of communication in preventing and managing conflicts, amplifying marginalised voices, and leveraging emerging technologies for development. She has published widely in scholarly journals of national and international purview. Ja'afaru is a member of Association of Communication Scholars & Professionals of Nigeria (ACSPN). She can be reached through sharifatujaafaru@gmail.com or sharifatu.gago@gvu.edu.ng; ORCID https://orcid.org/0009-0009-1334-1684.

Emmanuel John Anagu is a lecturer in the Department of Information Systems at Federal University Wukari, Nigeria, and a PhD student in Information Technology at Modibbo Adama University, Yola. His research explores information systems from behavioural, bio-physiological, and managerial perspectives across diverse contexts. He is particularly interested in management information systems, digital transformation, IoT policy, and technology readiness, with a focus on how these shape innovation, adoption, and organisational performance. His work fosters interdisciplinary dialogue at the intersection of technology, management, and social change, contributing to Africa's evolving digital ecosystem and the broader field of information systems.

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