ENGAGING GENERATION Z WITH VIRTUAL HERITAGE: HOW AUTHENTICITY AND TELEPRESENCE DRIVE CONTINUANCE INTENTION

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Abstract

In response to the declining interest of Generation Z in heritage tourism, Virtual Reality (VR) technology offers a promising solution to revive cultural appreciation. This study aims to test a behavioral model that explains the driving factors of continuance intention towards virtual heritage tourism platforms among this demographic. Adopting the Stimulus-Organism-Response (S-O-R) framework, quantitative data were collected from 195 Generation Z respondents in Indonesia through an online questionnaire and analyzed using PLS-SEM. The analysis results show that authenticity and interactivity (stimulus) have a significant positive effect on continuance intention (response), both directly and indirectly through the key mediating role of telepresence (organism). Specifically, authenticity was found to be the strongest predictor in creating telepresence. This study concludes that to ensure long-term engagement, virtual heritage experiences must focus on providing authentic and immersive content, instead of simply relying on the novelty of the technology itself.

Keywords: Virtual Tourism, Heritage Tourism, Generation Z, Continuance Intention, Telepresence, Authenticity

INTRODUCTION

Indonesia, a nation blessed with invaluable cultural heritage, is currently at a crossroads between preservation and relevance in the digital age. On one hand, the charm of cultural heritage has successfully become a strong magnet for foreign tourists, in line with government projections in the 2023/2024 Tourism and Creative Economy Outlook (KEMENPAREKRAF, 2020). However, on the other hand, a silent challenge emerges from within the country. Generation Z, a demographic cohort that grew up entirely within the digital ecosystem (Alruthaya et al., 2021; Saputro et al., 2025), shows a significant interest gap in conventional heritage tourism, which is often perceived as a passive and unstimulating experience (Agoes & Safari, 2024). This interest gap creates a sense of urgency: without the active involvement of the next generation, cultural values are at risk of losing their relevance, a condition that contradicts the spirit of sustainable tourism outlined in the Sustainable Development Goals.

To bridge this gap, leveraging technology becomes a necessity. Virtual Reality (VR) emerges as a highly potential medium, offering an immersive experience that transcends traditional physical visits (Steuer, 1992). VR's ability to psychologically transport users to a virtual environment, a phenomenon known as telepresence, is considered capable of revolutionizing how individuals interact with cultural content. Recent literature reviews confirm that VR and similar immersive technologies have become a primary focus in tourism and hospitality innovation (Loureiro et al., 2020). The push for this technological adoption has become a priority agenda, both at the regional level through the ASEAN Declaration on Digital Tourism and at the national level.

However, merely adopting the technology is not enough. The success of a virtual heritage tourism platform should not be measured by initial downloads but by intention to continue to use. This concept, rooted in the classic IS continuance model (Bhattacherjee, 2001), is reaffirmed in recent VR tourism studies that highlight user experience quality as a key predictor of long-term interest (Huang et al., 2021; Kuswati et al., 2021). To foster this intention, contemporary research shows that two experiential factors are crucial. First, interactivity, defined as the user's ability to modify and interact with the virtual environment in real-time (Rafaeli, 1988), has been consistently shown to enhance engagement (Al-Adwan et al., 2019). Second, authenticity, or the user's perception of the genuineness and truthfulness of the cultural representation (Ning, 2017; Setiawati et al., 2019), becomes a key determinant of value and meaning in the context of heritage tourism, even in its virtual form (Atzeni et al., 2022; Kuswati & Saleha, 2018). The synergy between high interactivity and perceived authenticity is believed to strengthen the sensation of telepresence, transforming a virtual visit from mere observation into a real and memorable experience.

Although the relationship between technological features and behavioral outcomes has been widely studied, a gap remains in understanding the psychological mechanisms at play for Generation Z in the context of virtual heritage tourism. Many studies stop at measuring physical visit intention, overlooking the crucial foundation of the intention to use the digital platform itself. Therefore, this study aims to fill this gap by proposing and testing an integrative model. Specifically, this research will analyze how interactivity and authenticity (as a stimulus) influence continuance intention (as a response), with telepresence (as the organism's internal state) as a mediating variable. By testing this model, this research is expected to provide evidence-based guidance for stakeholders to design virtual heritage

experiences that are not only captivating but also capable of engaging the hearts and minds of Generation Z sustainably.

REVIEW OF LITERATURE

The theoretical framework of this research adopts the Stimulus-Organism-Response (S-O-R) model, popularized by Mehrabian & Russell (1974). This theory posits that cues in the external environment (Stimulus) influence an individual's internal state, both cognitively and affectively (Organism), which in turn drives specific behavioral responses (Response). In this study, Interactivity and Authenticity serve as the Stimulus (S). The psychological state experienced by the user, Telepresence, represents the Organism (O). Finally, the Intention to Continue to Use becomes the resulting Response (R).

The Effect of Interactivity on Telepresence

Interactivity, as a technology's capacity to allow users to modify the virtual environment in real-time (Steuer, 1992), is a primary pillar of the VR experience. When users can actively move, touch objects, and see the environment respond to their actions, the boundary between the physical and virtual worlds blurs. This process enhances the illusion of reality, thereby directly increasing the perception of psychological presence, or telepresence (Cheng & Huang, 2022). Recent studies consistently identify interactivity as a crucial antecedent of deep immersive experiences and telepresence (J.-H. Kim et al., 2021).

H1: Interactivity has a positive effect on Telepresence.

The Effect of Authenticity on Telepresence

In the context of heritage tourism, authenticity—the perception that a virtual representation is genuine and true (Wang et al., 2021) plays a vital role. Authenticity provides value and meaning to the experience, which is highly sought after in cultural tourism (Dağ et al., 2024). When a Gen Z user believes that the artifacts and narratives presented in VR are an honest representation, the credibility of the entire experience increases. This trust makes it easier for the user to suspend disbelief, allowing them to feel more psychologically immersed and present in the virtual location (Guo et al., 2024).

H2: Authenticity has a positive effect on Telepresence.

The Effect of Telepresence on Continuance Intention to Use

Telepresence is the peak of the VR experience, the feeling of "truly being there" (Steuer, 1992). This experience is highly positive, immersive, and memorable (Tussyadiah et al., 2018). According to basic principles of consumer behavior and information systems theory, a highly satisfying and enjoyable experience will create a positive attitude and encourage the desire to repeat it in the future. Various empirical studies in virtual tourism consistently find telepresence to be a direct predictor of continuance intention (Cheng et al., 2022; Zhu et al., 2023).

H3: Telepresence has a positive effect on Continuance Intention to Use.

The Effect of Interactivity on Continuance Intention to Use

Aside from its role in building telepresence, interactivity can also provide direct satisfaction. The ability to control and interact with the environment gives users a sense of autonomy and active engagement, which is inherently enjoyable (Cheng et al., 2022). This is consistent with research in human-computer interaction, which shows that interactive systems tend to generate more positive evaluations and higher reuse intentions, as users feel more empowered and involved in the process (Leung et al., 2022).

H4: Interactivity has a positive effect on Continuance Intention to Use.

The Effect of Authenticity on Continuance Intention to Use

For audiences interested in cultural and historical content, the primary value lies in the truthfulness of the information. Perceived authenticity can provide direct cognitive satisfaction—the belief that they have learned something true and valuable (Sinha et al., 2024). This trust in the content's authenticity builds the platform's credibility, a factor proven to be crucial in forming long-term user loyalty to digital information sources and the intention to reuse them in the future (Kurnaz et al., 2024; Nam et al., 2022).

H5: Authenticity has a positive effect on Continuance Intention to Use.
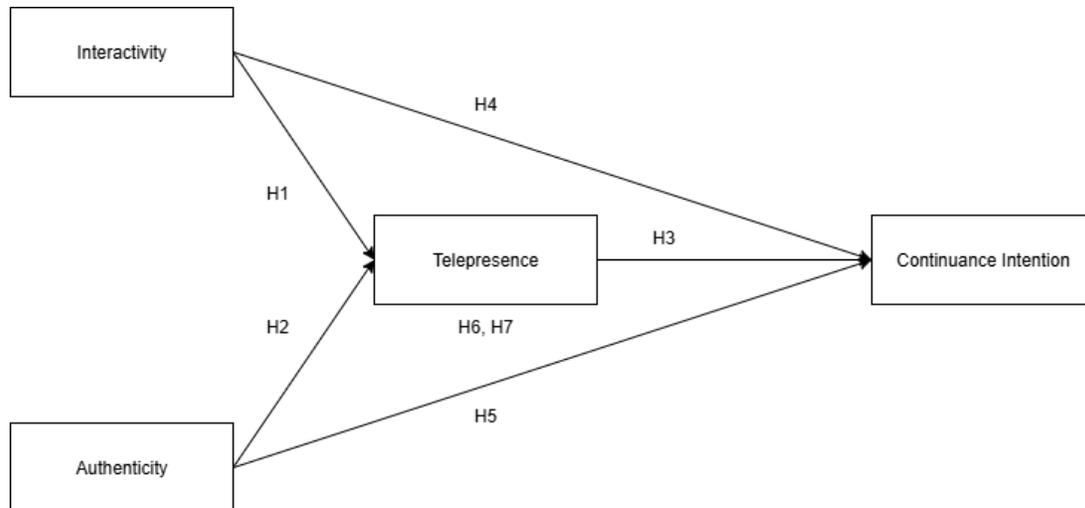

Figure 1. Research Model

The Mediating Role of Telepresence

Referring to the S-O-R framework, telepresence is positioned as a crucial psychological bridge. The influence of VR features (stimulus) on behavioral intention (response) does not only occur directly but is also significantly channeled through the psychological experience (organism). This mediating role is consistent with various applications of the S-O-R framework in virtual contexts, where the user's internal experience always serves as the bridge between environmental features and behavioral responses (Liu et al., 2023). In other words, Interactivity and Authenticity create the ideal conditions for users to experience a strong sense of telepresence, and this feeling of "truly being there" becomes the primary driver for them to want to repeat the experience.

H6: Telepresence mediates the effect of Interactivity on Continuance Intention to Use.

H7: Telepresence mediates the effect of Authenticity on Continuance Intention to Use.

RESEARCH METHOD

This study was designed using a quantitative approach with an explanatory design, aiming to explain and test the cause-and-effect relationships between the hypothesized variables. Data collection was conducted at a single point in time (cross-sectional) to efficiently capture respondents' perceptions and intentions. The target population for this research is Generation Z in Indonesia, defined as individuals born between 1997 and 2012

who have had prior experience with or have at least witnessed the use of Virtual Reality (VR) technology. Given the difficulty in defining a precise sampling frame for this population, this study utilized a non-probability sampling technique, specifically purposive sampling. This technique was chosen to ensure that the selected respondents fit the criteria and objectives of the research. The data collection process was carried out by distributing an online questionnaire through various social media platforms. Through this process, a total of 195 valid responses were collected and deemed suitable for analysis. The demographic characteristics of the research sample are summarized in Table 1.

Table 1.
Demographic Characteristics of Respondents (N=195)

Characteristics	Category	Total (n)	Percentage (%)
Gender	Male	108	55.38%
	Female	87	44.62%
Age	≤ 17	13	6.67%
	18 - 22	91	46.67%
	23 - 27	88	45.13%
	> 27	3	1.54%
VR Experience	Yes	125	64.10%
	No	70	35.90%
Virtual Tourism Experience	Yes	102	52.31%
	No	93	47.69%
Type of Residence	General area	125	64.10%
	Area with high cultural significance	70	35.90%
Travel Destination Preference	Domestic	96	49.23%
	International	99	50.77%
	TOTAL	195	100%

The research instrument used was a questionnaire consisting of several sections to measure the main variables in the model. All question items were measured using a 5-point Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The measurement of these variables was adapted from previously validated instruments. Specifically, the Interactivity and Telepresence variables were measured using items from Yim & Par (2019). The Authenticity variable was measured by adapting the scale from the research of M. J. Kim et al (2020). Finally, the dependent variable, Continuance Intention to Use, was measured by adopting the instrument from the study by Koroma et al (2022).

All collected data were analyzed using the Partial Least Squares Structural Equation Modeling (PLS-SEM) method with the help of SmartPLS 4 software. The PLS-SEM approach was chosen because it is highly suitable for predictive research models and does not require strict data normality assumptions (Hair, 2010). The analysis process was carried

out in two main stages: evaluation of the measurement model (outer model) to ensure instrument validity and reliability, and evaluation of the structural model (inner model) to test the research hypotheses through a bootstrapping procedure.

RESULTS AND DISCUSSION

This part presents the results of the data analysis conducted to test the research model. The analysis was performed using the Partial Least Squares Structural Equation Modeling (PLS-SEM) method with SmartPLS 4 software. The presentation of the results will cover the evaluation of the measurement model (outer model), the evaluation of the structural model (inner model), and an in-depth discussion of each finding.

Outer Model

The evaluation of the measurement model is conducted to ensure that the instruments used in this study are valid and reliable. The three main criteria tested are convergent validity, internal consistency reliability, and discriminant validity.

Convergent validity indicates that the question items for a single construct are indeed measuring that construct. The criteria used are that the outer loading value of each item must be > 0.70, and the Average Variance Extracted (AVE) for each construct must be > 0.50. Meanwhile, internal consistency reliability is measured by Cronbach's Alpha and Composite Reliability (rho_c), with a recommended value of > 0.70 (Hair et al., 2019).

Table 2.
Convergent Validity

Variable	Item	Outer Loading	Cronbach's Alpha	CR	AVE
Authenticity	AU1	0.886	0.785	0.902	0.821
	AU2	0.926			
Interactivity	IE1	0.792	0.826	0.884	0.657
	IE2	0.778			
	IE3	0.850			
	IE4	0.820			
Telepresence	TL1	0.866	0.813	0.890	0.729
	TL2	0.896			
	TL3	0.796			
Continuance Intention to Use	ITU1	0.871	0.906	0.934	0.780
	ITU2	0.914			
	ITU3	0.894			
	ITU4	0.854			

Based on Table 2, all outer loading values exceed the threshold of 0.70, indicating that each item is valid in measuring its corresponding construct. All Average Variance Extracted (AVE) values are above 0.50, and both Cronbach's Alpha and Composite

Reliability values are above 0.70. Therefore, it can be concluded that the measurement model meets the criteria for convergent validity and demonstrates strong internal reliability.

Discriminant validity ensures that each construct in the study is a unique concept, distinct from the other constructs. The test was performed using the Heterotrait-Monotrait Ratio (HTMT) criterion, where the HTMT value between constructs should be lower than 0.90 (Hair et al., 2022).

Table 3.
Discriminant Validity (HTMT)

	Authenticity	Continuance Intention to Use	Interactivity	Telepresence
Authenticity				
Continuance Intention to Use	0.533			
Interactivity	0.317	0.419		
Telepresence	0.793	0.571	0.400	

The results in Table 3 show that all HTMT values are below the threshold of 0.90. The highest value is 0.793 between Authenticity and Telepresence. This confirms that each construct is distinct, and discriminant validity has been established

Structural Model Analysis (Inner Model)

After the measurement model was confirmed to be valid and reliable, the next step was to test the structural model to assess the model's predictive power and to test the hypotheses.

Coefficient of Determination (R-Square) The R-Square (R^2) value indicates the proportion of variance in the dependent variable that can be explained by its independent variables.

- The Telepresence variable has an R^2 value of 0.442, which means that 44.2% of the variance in Telepresence can be explained by Interactivity and Authenticity.
- The Continuance Intention to Use variable has an R^2 value of 0.317, meaning that 31.7% of the variance in continuance intention is explained by Interactivity, Authenticity, and Telepresence. This value can also be classified as moderate.

Hypothesis Testing Results: Hypothesis testing was performed through a bootstrapping procedure. A hypothesis is considered supported if the P-value < 0.05 or the T-statistic > 1.96.

Table 4.
Summary of Hypothesis Testing Results

Hypothesis	Path	Beta (O)	P-Values	Description	R-Square
H1	IE -> TL	0.177	0.003	Accepted	44.2%
H2	AU -> TL	0.598	0.000	Accepted	
H3	TL -> ITU	0.282	0.002	Accepted	31.7%
H4	IE -> ITU	0.222	0.000	Accepted	
H5	AU -> ITU	0.214	0.010	Accepted	
H6	IE -> TL -> ITU	0.050	0.015	Accepted	
H7	AU -> TL -> ITU	0.169	0.004	Accepted	

Note: IE: Interactivity; TL: Telepresence; AU: Authenticity; ITU: Continuance Intention to Use

The findings strongly support H1 and H2, indicating that Interactivity ($\beta = 0.177$) and Authenticity ($\beta = 0.598$) both have significant positive effects on Telepresence. This study also confirms the central role of Telepresence as a mediating variable. H3 is supported, showing that the stronger the sense of "being there" (telepresence), the greater the intention to reuse the platform ($\beta = 0.282$). Furthermore, the mediation hypotheses (H6 and H7) are also supported, indicating that the effects of Interactivity and Authenticity are not only direct but are also significantly mediated through Telepresence. In other words, Interactivity and Authenticity enhance continuance intention primarily by fostering a strong sense of presence. The acceptance of H4 and H5 demonstrates that Interactivity ($\beta = 0.222$) and Authenticity ($\beta = 0.214$) also have significant direct effects on continuance intention.

Discussion

This section provides an in-depth discussion of the research findings derived from the data analysis. The discussion focuses on interpreting each supported hypothesis to offer a comprehensive understanding of the behavioral model of continued usage in virtual heritage tourism among Generation Z.

The acceptance of Hypotheses 1 (H1) and 2 (H2) confirms that stimuli from the virtual environment—namely interactivity and authenticity—significantly enhance the feeling of telepresence. The significant influence of interactivity indicates that when users are given the ability to control and interact with the virtual environment, the experience becomes more realistic and immersive. This supports the findings of (Cheng et al., 2022; J.-H. Kim et al., 2021), who identified interactivity as a key element in virtual museum experiences. However, a more striking result is the strong influence of authenticity. This implies that in the context of cultural heritage content, users' perception that what they see is a true and accurate representation is the most dominant factor in generating the feeling of "being there." This finding reinforces the arguments of (Guo et al., 2024), asserting that in cultural tourism, authenticity is the most valuable currency—even in digital environments.

Furthermore, the acceptance of Hypothesis 3 (H3) indicates that telepresence has a positive and significant effect on continued usage intention. This represents the core of the virtual experience. The result suggests that the feeling of "truly being there" is a

psychologically rewarding and enjoyable experience, encouraging users to return for similar experiences in the future. This immersive sensation is not merely a technical feature but a cognitive and emotional reward that strongly motivates continued engagement with the platform. This is consistent with numerous studies in the VR field that link immersive experiences with positive behavioral outcomes (Tussyadiah et al., 2018).

The study also identified direct effects of stimuli on responses, as evidenced by the acceptance of Hypotheses 4 (H4) and 5 (H5). The acceptance of H4 indicates that interactivity alone—by providing users with a sense of control and agency—is sufficient to increase continued usage intention, aligning with prior research on human-computer interaction (Leung et al., 2022). Meanwhile, the acceptance of H5 demonstrates that the authenticity of content delivers cognitive satisfaction to users seeking accurate knowledge, thereby fostering trust and loyalty toward the platform as a credible source of cultural information (Nam et al., 2022).

Finally, the support for Hypotheses 6 (H6) and 7 (H7) confirms the critical mediating role of telepresence. These findings present the most comprehensive picture of how virtual experiences function. While interactivity and authenticity are important, their true strength lies in their ability to trigger a sense of telepresence. This feeling acts as the core "engine" that transforms technical features and content quality into long-term user loyalty. It underscores that to build deep engagement, a platform must be more than just "informative" or "interactive"—it must be capable of fully immersing users in its world.

Overall, the findings of this study comprehensively validate the Stimulus-Organism-Response (S-O-R) theoretical framework in a modern context. The results demonstrate a clear pathway: well-designed virtual environmental features (Stimulus: Interactivity and Authenticity) effectively shape users' internal psychological states (Organism: Telepresence), which in turn drive positive and sustained behavioral intentions (Response: Continued Usage Intention).

CONCLUSION

The main conclusion of this study is that, to foster long-term engagement among Generation Z, virtual cultural heritage tourism experiences must center on creating a strong sense of psychological presence (telepresence). The feeling of "truly being there" was found to be the primary driver of users' intention to reuse the platform. Furthermore, this study reveals that the most powerful trigger for generating telepresence is authenticity—the perception that the content is genuine and accurate—whose influence even surpasses that of interactivity. Accordingly, the most effective strategy to engage Gen Z with cultural heritage in digital formats is to present authentic and credible content within an interactive environment that synergistically immerses users in a memorable and engaging experience.

The findings of this study yield several important implications, both theoretical and practical. Validation of the S-O-R Framework: This study successfully applies and confirms the relevance of the Stimulus-Organism-Response (S-O-R) theoretical framework in the context of modern immersive technology, particularly within virtual heritage tourism.

The study empirically establishes telepresence as the key organism (mediator) variable that bridges technological features (stimuli) and behavioral intention (response), offering greater clarity on the psychological mechanisms involved in VR experiences. By demonstrating that authenticity has a stronger influence than interactivity in generating

telepresence in a cultural heritage context, this study makes a specific contribution to the body of knowledge in digital tourism. Prioritize historical accuracy and content authenticity in all digitization projects. Rather than focusing solely on technological sophistication, ensure that the narratives and visuals truly represent the cultural values being showcased.

For VR/AR Application Developers, design experiences that balance meaningful interactivity (e.g., the ability to explore, not just observe) with assurances of content authenticity. The synergy between these two elements is key to evoking telepresence. For Government & Policymakers (e.g., Ministry of Tourism and Creative Economy), these findings may serve as a basis for developing quality standards or funding criteria for digital tourism projects, placing greater emphasis on authenticity and immersive experience rather than on visual appeal alone.

This study acknowledges several limitations that should be considered. First, the use of non-probability sampling (purposive sampling) limits the generalizability of the findings to the entire Generation Z population in Indonesia. Second, the cross-sectional design captures intention at a single point in time and does not reflect actual long-term usage behavior. Third, the data were self-reported, which may introduce perceptual bias from respondents.

Given these limitations, several directions for future research are proposed. First, experimental designs could be employed to directly compare the effects of varying levels of authenticity or interactivity on telepresence. Second, longitudinal studies are needed to determine whether continued usage intention translates into actual behavioral engagement over time. Third, future research may explore other potentially relevant variables, such as gamification elements, social features (e.g., interaction with other users), or the role of respondents' cultural identity. Finally, case studies focused on specific VR applications for individual heritage sites could offer deeper and more contextual insights.

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REFERENCES

Agoes, A., & Safari, A. (2024). Motivational patterns for engaging in heritage bus city tours among youth tourists (Generation y and Z): An unsupervised machine learning analysis. *IOP Conference Series: Earth and Environmental Science*, *1366*(1), 12044. https://doi.org/10.1088/1755-1315/1366/1/012044

Al-Adwan, A. S., Alrousan, M., Al-Soud, A., & Al-Yaseen, H. (2019). Revealing the black box of shifting from electronic commerce to mobile commerce: the case of Jordan. *Journal of Theoretical and Applied Electronic Commerce Research*, *14*(1), 51–67. https://doi.org/10.4067/S0718-18762019000100105

Alruthaya, A., Nguyen, T.-T., & Lokuge, S. (2021). The application of digital technology and the learning characteristics of generation z in higher education. *ArXiv Preprint ArXiv:2111.05991*.

Atzeni, M., Del Chiappa, G., & Mei Pung, J. (2022). Enhancing visit intention in heritage tourism: The role of object-based and existential authenticity in non-immersive virtual reality heritage experiences. *International Journal of Tourism Research*,

24(2), 240–255. https://doi.org/10.1002/jtr.2497

Bhattacherjee, A. (2001). Understanding information systems continuance: An expectation-confirmation model. *MIS Quarterly*, 351–370.

Cheng, L. K., & Huang, H. L. (2022). Virtual tourism atmospheres: The effects of pleasure, arousal, and dominance on the acceptance of virtual tourism. *Journal of Hospitality and Tourism Management*, *53*, 143–152. https://doi.org/10.1016/j.jhtm.2022.10.002

Cheng, L. K., Huang, H. L., & Lai, C. C. (2022). Continuance intention in running apps: the moderating effect of relationship norms. *International Journal of Sports Marketing and Sponsorship*, *23*(1), 132–154. https://doi.org/10.1108/IJSMS-08-2020-0143

Dağ, K., Çavuşoğlu, S., & Durmaz, Y. (2024). The effect of immersive experience, user engagement and perceived authenticity on place satisfaction in the context of augmented reality. *Library Hi Tech*, *42*(4), 1331–1346. https://doi.org/10.1108/LHT-10-2022-0498

Guo, Y., Lu, S., Shen, M., Huang, W., Yi, X., & Zhang, J. (2024). Differences in heritage tourism experience between VR and AR: a comparative experimental study based on presence and authenticity. *ACM Journal on Computing and Cultural Heritage*, *17*(2), 1–21.

Hair, J. F. (2010). Black, Wc, Babin, Bj, & Anderson, Re (2010). *Multivariate Data Analysis*, *7*, 77–95.

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, *31*(1), 2–24.

Huang, C. M., Liao, J. Y., Lin, T. Y., Hsu, H. P., Charles Lee, T. C., & Guo, J. L. (2021). Effects of user experiences on continuance intention of using immersive three-dimensional virtual reality among institutionalized older adults. *Journal of Advanced Nursing*, *77*(9), 3784–3796. https://doi.org/10.1111/jan.14895

KEMENPAREKRAF. (2020). Outlook Pariwisata dan Ekonomi Kreatif. In *Deputi Bidang Kebijakan Strategis Kementerian Pariwisata dan Ekonomi Kreatif/ Badan Pariwisata dan Ekonomi Kreatif Republik Indonesia Jakarta – Indonesia*. https://bankdata.kemenparekraf.go.id/upload/document_satker/a6d2d69c8056a29657be2b5ac3107797.pdf

Kim, J.-H., Kim, M., Park, M., & Yoo, J. (2021). How interactivity and vividness influence consumer virtual reality shopping experience: the mediating role of telepresence. *Journal of Research in Interactive Marketing*, *15*(3), 502–525.

Kim, M. J., Lee, C. K., & Preis, M. W. (2020). The impact of innovation and gratification on authentic experience, subjective well-being, and behavioral intention in tourism virtual reality: The moderating role of technology readiness. *Telematics and Informatics*, *49*, 101349. https://doi.org/10.1016/j.tele.2020.101349

Koroma, J., Rongting, Z., Muhideen, S., Akintunde, T. Y., Amosun, T. S., Dauda, S. J., & Sawaneh, I. A. (2022). Assessing citizens' behavior towards blockchain cryptocurrency adoption in the Mano River Union States: Mediation, moderation role of trust and ethical issues. *Technology in Society*, *68*, 101885.

Kurnaz, H. A., Kahraman, O., Kurnaz, A., & Atsız, O. (2024). Examining Turkish travellers' non-immersive virtual heritage tour experiences through stimulus–organism–response model. *Journal of Hospitality and Tourism Technology*. https://doi.org/10.1108/jhtt-10-2023-0323

Kuswati, R., Purwanto, B. M., Sutikno, B., & Aritejo, B. A. (2021). Pro-Environmental Self-Identity: Scale Purification in the Context of Sustainable Consumption Behavior. *Eurasian Studies in Business and Economics*, *17*, 173–185. https://doi.org/10.1007/978-3-030-65147-3_12

Kuswati, R., & Saleha, A. (2018). Antecedents of online purchasing behavior Antesenden perilaku pembelian secara daring. *Benefit: Jurnal Manajemen Dan Bisnis*, *3*(1), 39. https://doi.org/10.23917/benefit.v3i1.6655

Leung, W. K. S., Cheung, M. L., Chang, M. K., Shi, S., Tse, S. Y., & Yusrini, L. (2022). The role of virtual reality interactivity in building tourists' memorable experiences and post-adoption intentions in the COVID-19 era. *Journal of Hospitality and Tourism Technology*, *13*(3), 481–499. https://doi.org/10.1108/JHTT-03-2021-0088

Liu, Y., Li, Q., Edu, T., & Negricea, I. C. (2023). Exploring the Continuance Usage Intention of Travel Applications in the Case of Chinese Tourists. *Journal of Hospitality and Tourism Research*, *47*(1), 6–32. https://doi.org/10.1177/1096348020962553

Loureiro, S. M. C., Guerreiro, J., & Ali, F. (2020). 20 years of research on virtual reality and augmented reality in tourism context: A text-mining approach. *Tourism Management*, *77*, 104028. https://doi.org/10.1016/j.tourman.2019.104028

Mehrabian, A., & Russell, J. A. (1974). *An approach to environmental psychology.* the MIT Press.

Nam, K., Dutt, C., & Baker, J. (2022). Authenticity in Objects and Activities: Determinants of Satisfaction with Virtual Reality Experiences of Heritage and Non-Heritage Tourism Sites. *Information Systems Frontiers*, *25*, 1219–1237. https://doi.org/10.1007/s10796-022-10286-1

Ning, W. (2017). Rethinking authenticity in tourism experience. In *The political nature of cultural heritage and tourism* (pp. 469–490). Routledge.

Rafaeli, S. (1988). From new media to communication. *Sage Annual Review of Communication Research: Advancing Communication Science*, *16*(1), 110–134.

Saputro, E. P., Setyaningrum, D. P., & Febriyanto, A. (2025). Understanding Generation Z Muslims in Indonesia to switching intention to buy green products: a stimulus-organism-response approach. *Journal of Islamic Marketing*.

Setiawati, E., Trisnawati, R., & Diana, U. (2019). the Analysis of Acceptance of Hospital Information Management System (Hims) Using Technology Acceptance Model Method. *Riset Akuntansi Dan Keuangan Indonesia*, *4*(2), 186–195. https://doi.org/10.23917/reaksi.v4i2.8652

Sinha, N., Dhingra, S., Sehrawat, R., Jain, V., & Himanshu, H. (2024). Customers' intention to use virtual reality in tourism: a comprehensive analysis of influencing factors. *Tourism Review*. https://doi.org/10.1108/tr-07-2023-0488

Steuer, J. (1992). Defining Virtual Reality: Dimensions Determining Telepresence. *Journal of Communication*, *42*(4), 73–93. https://doi.org/10.1111/j.1460-2466.1992.tb00812.x

Tussyadiah, I. P., Wang, D., Jung, T. H., & tom Dieck, M. C. (2018). Virtual reality, presence, and attitude change: Empirical evidence from tourism. *Tourism Management*, *66*, 140–154. https://doi.org/10.1016/j.tourman.2017.12.003

Wang, A., Thompson, M., Uz-Bilgin, C., & Klopfer, E. (2021). Authenticity, Interactivity, and Collaboration in Virtual Reality Games: Best Practices and Lessons Learned.

Frontiers in Virtual Reality, *2*, 734083. https://doi.org/10.3389/frvir.2021.734083

Yim, M. Y. C., & Park, S. Y. (2019). "I am not satisfied with my body, so I like augmented reality (AR)": Consumer responses to AR-based product presentations. *Journal of Business Research*, *100*, 581–589. https://doi.org/10.1016/j.jbusres.2018.10.041

Zhu, C., Wu, D. C. W., Hall, C. M., Fong, L. H. N., Koupaei, S. N., & Lin, F. (2023). Exploring non-immersive virtual reality experiences in tourism: Empirical evidence from a world heritage site. *International Journal of Tourism Research*, *25*(3), 372–383.