



The Impact of Virtual Reality Technology on Purchase Intention of Gen-Z Customers in Online Travel Platforms: A Case Study of Chiang Mai Destination

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Abstract. Although virtual reality (VR) technology has emerged over the past two decades, it has gained popularity and widespread use only in some industries, such as gaming. Meanwhile, the travel and tourism industry has high potential market value, yet there remains a growth gap for VR, particularly in the consumer-oriented design of digital platforms. This study explores the impact of VR technology on purchase intention, focusing on Gen-Z travelers through the simulation of main VR features that could be available in online travel platforms. The VR travel value model has been proposed, as well as the effects of VR technology presence on technology awareness, travel destination awareness, traveling intention, and ultimately, purchase intention have been investigated and analyzed in relationships by Partial Least Squares Structural Equation Modeling (PLS-SEM). Chiang Mai, Thailand, was selected under the control condition as the unseen target of travel destinations. Participants were allowed to experience VR technology in the controlled experiment, which provided VR headsets to explore virtual sites; subsequently, they completed a structured questionnaire. The findings indicate that VR significantly attracts Gen-Z's interest in technology-driven travel solutions, increases their familiarity with destinations, and enhances their willingness to visit and purchase travel packages. This study highlights the untapped potential of immersive technologies in travel platforms, particularly for expatriate and domestic travel plans. The implication provides actionable recommendations for destination owners and online travel agencies (OTAs) to engage tech-savvy young travelers effectively.

Keywords: Virtual reality; Chiang Mai destination; Tourism; Online travel agent, Purchase intention, Gen-Z.

1 Introduction

Virtual Reality (VR) technology has evolved from its entertainment roots into a powerful tool for immersive experiences across industries, including tourism. In this con-

text, VR enables users to explore destinations in lifelike 3D environments, reducing uncertainty and enhancing emotional connection. However, its use in consumer travel platforms remains limited. Online travel agencies (OTAs) have yet to fully capitalize on VR's potential to engage digitally with native users, especially Generation Z (Gen-Z), who prefer interactive and tech-driven experiences over static content. As digital natives, Gen-Z is drawn to personalized, engaging previews when considering travel, making them an ideal audience for immersive tourism marketing.

This study explores how VR influences Gen-Z's travel-related purchase intention, using Chiang Mai as a case destination. The proposed VR Travel Value Model examines both direct and mediated relationships through five constructs: VR Technology Presence, Technology Awareness, Travel Destination Awareness, Traveling Intention, and Purchase Intention. A controlled experiment was conducted where participants experienced a VR-based travel simulation and completed a structured survey. Results were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The study aims to (1) evaluate VR's effect on purchase intention, (2) understand Gen-Z behavioral patterns across awareness and intention stages, and (3) offer insights for OTAs and destination marketers seeking to leverage VR in travel promotion.

2 Literature Review

2.1 Virtual Reality (VR) Technology Presence

Virtual Reality (VR) immerses users in interactive, three-dimensional environments using advanced technology, creating realistic, sensory-rich experiences [1]. VR allows potential travelers to vividly experience destinations, reducing uncertainty and positively influencing travel attitudes and intentions [2]. Recent studies confirm that VR's immersive nature significantly enhances consumer engagement compared to traditional promotional methods, by fostering emotional connections and realistic previews of destinations [3].

2.2 Purchase Intention

Purchase intention is a behavioral measure reflecting the consumer's likelihood of buying a product or service [4]. In tourism, VR-generated telepresence significantly correlates with stronger travel purchase intentions, particularly by enhancing pre-trip experiences [5]. Purchase intention, therefore, serves as a critical indicator of VR's effectiveness in travel marketing.

2.3 Technology Awareness

Technology awareness plays a significant role in shaping consumer behavior, particularly influencing variety-seeking tendencies and sensitivity to price changes [6]. Consumers exposed to immersive VR experiences often show increased curiosity and exploratory behaviors, driven by the enhanced realism and emotional engagement VR

provides [7]. Recent studies also indicate that deeper immersion in VR positively impacts purchase intentions by fostering emotional connections and reducing consumer uncertainty about products and destinations [8].

2.4 Destination Awareness

High destination awareness positively correlates with travel intention and overall tourism attractiveness, highlighting its importance in destination marketing [9]. VR can significantly elevate destination awareness by vividly showcasing destination characteristics, thus influencing potential travelers' decisions.

2.5 Traveling Intention

Travel intention represents an individual's psychological preparedness to act on travel motivations, effectively linking internal desires with actual travel behavior [10]. VR's immersive and realistic previews have shown effectiveness in heightening travel intentions by generating emotional engagement and detailed imagery [11].

2.6 Generation Z

Generation Z, born between 1997 and 2012, is a digital native whose consumer behavior is profoundly influenced by immersive technologies [12]. Their comfort with technology and preference for experiential consumption make them ideal candidates for VR-based tourism marketing strategies. Understanding Gen-Z's engagement with VR provides critical insights for effective targeting and increasing purchase intentions in tourism [13]. [14], proposed a model examining how virtual reality experiences influence consumer decision-making by enhancing affective forecasting, mental imagery, and emotional engagement (see Figure 1). Their framework highlights how immersive technology can generate psychological effects like telepresence and simulated future enjoyment, which shape consumer expectations and behavioral intentions. While their study compared the effects of VR experiences with traditional 2D content, this research takes a more focused approach by exploring how VR alone, without comparison to other formats, impacts Gen-Z consumers in the context of travel planning. By isolating the VR experience, this study builds upon [14] work to investigate how immersive travel simulations shape awareness and intention when VR is the primary touchpoint. This sets the foundation for introducing a new model proposed by the author.

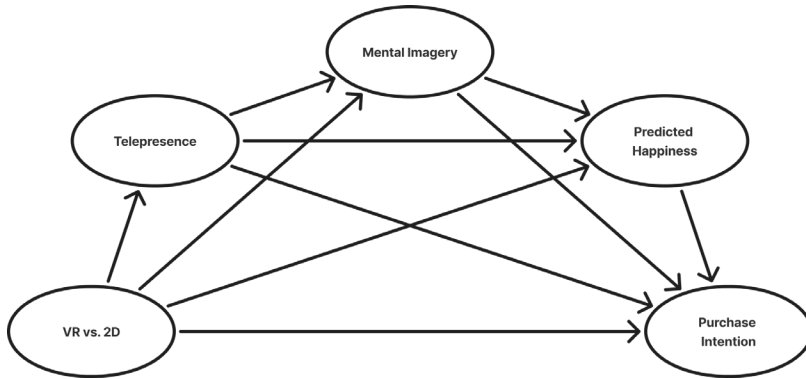


Fig. 1. Skard's Research Model

Source: Skard, S., Knudsen, E. S., Sjøstad, H., & Thorbjørnsen, H. 2021

3 Methodology

3.1 Research Design

This study adopts a quantitative-exploratory design using Partial Least Squares Structural Equation Modeling (PLS-SEM) to investigate how Virtual Reality (VR) experiences influence Generation Z consumers' purchase intention in the context of travel. It introduces a new model called the VR Travel Value Model (see Figure 2), which consists of five constructs: VR Technology Presence, Technology Awareness, Travel Destination Awareness, Traveling Intention, and Purchase Intention. The model proposes both direct and indirect pathways through which VR may influence purchase intention, including potential mediating effects through awareness and traveling intention.

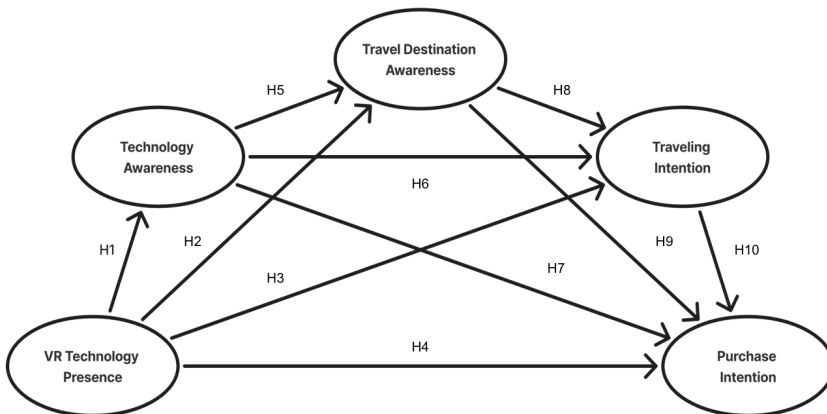


Fig. 2. VR Travel Value Model (the author's revised model in this study).

3.2 Participants and Data Collection

This study involved 24 Generation Z participants, aged 18 to 27, selected for their familiarity with digital platforms and interest in immersive experiences. Each participant engaged in a VR simulation showcasing travel attractions in Chiang Mai, followed by a post-simulation survey. The questionnaire was designed to measure constructs from the VR Travel Value Model, combining 7-point Likert-scale items for quantitative analysis and open-ended questions for qualitative insight. All participation was voluntary and conducted under informed consent.

The research process was guided by an Input–Process–Output (IPO) framework (see Figure 3). It began with a literature review to identify gaps and develop the conceptual model, followed by the design of a VR simulation and a behavioral intention questionnaire. This structured process enabled the collection of primary and secondary data to understand participant reactions and behavioral tendencies. The final step involved analyzing both types of data to draw insights relevant for future marketing strategy.

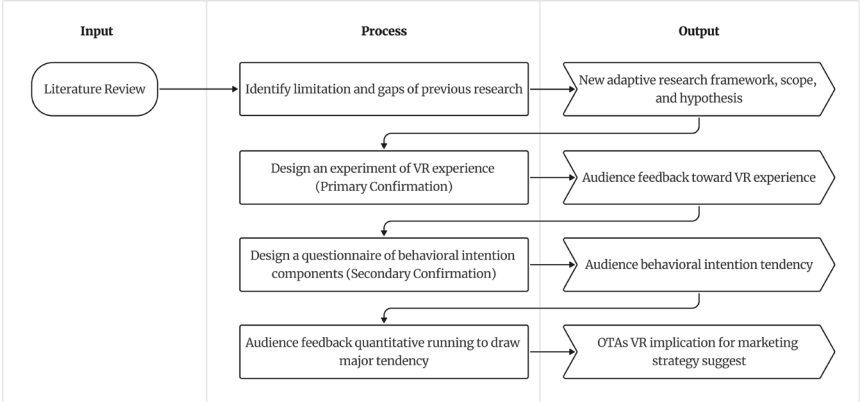


Fig. 3. Research Conceptual Design

3.3 Measurement and Instruments

The variables in the VR Travel Value Model were measured using reflective indicators adapted from previous studies and adjusted to fit the context of immersive travel experiences. VR Technology Presence was measured through three indicators reflecting personal, physical, and social presence. Technology Awareness included two indicators focused on variety-seeking and price sensitivity. Travel Destination Awareness, Traveling Intention, and Purchase Intention were each measured using a single item tailored to the VR simulation context.

To complement the quantitative survey, participants also responded to open-ended questions that explored their impressions of the VR experience, what increased or reduced their interest in visiting Chiang Mai, and their thoughts on the relevance of VR in travel planning. These qualitative responses helped enrich the interpretation of results and provided deeper insight into Gen-Z’s perceptions and expectations.

3.4 Data Analysis

The data collected was analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with the SmartPLS software. This method was chosen due to its suitability for exploratory studies with small sample sizes and complex models involving multiple constructs and mediation paths. The analysis focused on evaluating the relationships proposed in the VR Travel Value Model by examining path coefficients, t-statistics, and p-values through bootstrapping with 5,000 subsamples.

The reliability and validity of the measurement model were assessed through composite reliability, average variance extracted (AVE), and outer loadings. Discriminant validity was evaluated using the Fornell-Larcker criterion. In addition to the structural model analysis, qualitative data from open-ended responses were analyzed thematically to identify recurring patterns in how participants described their VR experience, destination interest, and views on using VR for future travel planning. These insights were used to support and expand on the quantitative findings.

4 Results

4.1 Structural Model Assessment

The results (see Table 1) from the PLS-SEM analysis provide mixed support for the hypothesized relationships within the VR Travel Value Model. Out of the ten hypotheses, three paths were found to be statistically significant: (1) VR Technology Presence significantly influenced Travel Destination Awareness, (2) Travel Destination Awareness significantly influenced Traveling Intention, and (3) Traveling Intention significantly influenced Purchase Intention. The remaining paths were not statistically supported.

Table 1. Structural Model Results (Hypothesis Testing)

Hypothesis	Path	β Coefficient	P-value	Result
H1	VR Technology Presence $\rightarrow$ Technology Awareness	0.320	0.111	Rejected
H2	Technology Awareness $\rightarrow$ Travel Destination Awareness	0.163	0.446	Rejected
H3	VR Technology Presence $\rightarrow$ Travel Destination Awareness	0.574	0.006	Accepted
H4	VR Technology Presence $\rightarrow$ Purchase Intention	-0.006	0.959	Rejected
H5	Technology Awareness $\rightarrow$ Purchase Intention	0.401	0.116	Rejected
H6	Technology Awareness $\rightarrow$ Traveling Intention	-0.155	0.390	Rejected
H7	Travel Destination Awareness $\rightarrow$ Traveling Intention	0.658	0.000	Accepted
H8	Travel Destination Awareness $\rightarrow$ Purchase Intention	-0.350	0.096	Rejected

H9	VR Technology Presence → Traveling Intention	0.311	0.085	Rejected
H10	Traveling Intention → Purchase Intention	0.860	0.000	Accepted

The significant results reflect a strong mediated effect, indicating that while VR Technology Presence may not directly drive purchase intention, it plays a meaningful role through increasing awareness and intention. Notably, the direct effect of VR Technology Presence on Purchase Intention (H4) was not significant, reinforcing the importance of indirect influence.

4.2 Measurement Model Assessment

To assess the reliability and validity of the constructs, the measurement model was evaluated using outer loadings, composite reliability (CR), and average variance extracted (AVE). All constructs demonstrated acceptable reliability, with composite reliability values above 0.70. Convergent validity was confirmed, as all AVE values exceeded the recommended threshold of 0.50. Discriminant validity was also established using the Fornell-Larcker criterion (see Table 2).

Table 2. Measurement Model Evaluation

Construct	Indicators	Outer Loadings	Composite Reliability	AVE
VR Technology Presence	3	> 0.70	0.844	0.646
Technology Awareness	2	> 0.70	0.794	0.660
Travel Destination Awareness	1	-	-	-
Traveling Intention	1	-	-	-
Purchase Intention	1	-	-	-

Constructs with single indicators are not evaluated for CR and AVE.

5 Discussion and Conclusions

The rapid growth of VR technology over the past two decades has primarily impacted certain industries, such as gaming, while leaving significant untapped potential within travel and tourism, particularly regarding consumer-oriented digital platforms [8], [15]. This study examines the impact of VR technology on the purchase intentions of Gen-Z travelers. The VR Travel Value Model is proposed, investigating the relationships between VR presence, technological awareness, destination awareness, travel intention, and ultimately, purchase intention. The analysis results from PLS-SEM state worth points for discussion.

The findings reveal that VR Technology Presence does not have a statistically significant direct effect on Purchase Intention. However, it influences Travel Destination Awareness, which in turn significantly strengthens Traveling Intention and ultimately leads to greater purchase intention [7]. This confirms the value of mediated pathways

in consumer decision-making, a concept echoed in recent research on immersive technologies in tourism [5], [13]. The data also indicate that Technology Awareness is not a strong predictor of travel behavior for Gen-Z consumers, likely due to their already high digital fluency—a trend observed in prior studies focused on digital-native consumer segments [3], [9]. Moreover, in the insight feedback, qualitative responses from participants reinforced these quantitative results. Comments frequently mentioned how the VR experience made the destination feel “real,” “familiar,” or “easy to imagine,” underscoring VR’s strength in building destination awareness and mental imagery, key psychological factors influencing intention [14]. These findings highlight that VR’s role is not in closing a transaction, but in cultivating the awareness and emotional engagement that leads to action later in the customer journey.

In is room for future research since the study remains limited. The sample size ($N=24$) is relatively small, and three of the five constructs were measured using single-item indicators. While appropriate for a pilot study using PLS-SEM, this limits the reliability and generalizability of the results. Additionally, the study focused on multiple destinations in Chiang Mai, Thailand, with participants located in Chiang Mai, Thailand, although they were exposed to a travel destination that they had not visited before. Therefore, future research should expand to include larger and more diverse populations, use multi-item indicators for all constructs, and compare different types of VR content (e.g., interactive vs. passive, guided vs. exploratory). It may also be valuable to explore moderate factors such as prior travel experience, cultural background, or the travel destination from a different city or even countries. Additionally, it would be beneficial to explore various VR content formats (such as passive tours versus interactive or gamified experiences) and conduct longitudinal studies to evaluate how repeated VR exposure affects consumer behavior and decision-making processes [15]. The VR Travel Value Model introduced in this study provides a strong foundation for further academic inquiry and practical innovation in the immersive tourism industry.

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In conclusion, VR technology's underutilization in the travel and tourism industry stems not from a lack of potential but from a misunderstanding of its role. Rather than serving as a direct conversion tool, its real value lies in enhancing Travel Destination Awareness and strengthening Traveling Intention, which together shape Purchase Intention. These mediating effects show that VR prepares travelers, not by prompting immediate action, but by helping them imagine, evaluate, and emotionally connect with destinations. For Gen-Z consumers, immersive experiences build early confidence and familiarity, driving travel planning decisions. In this light, VR should be seen not as a selling tool, but as a sensemaking tool—bringing destinations to life before choices are made. Its continued underuse in tourism signals more than a missed opportunity; it exposes a strategic blind spot that online travel agencies (OTAs) must confront by planning and implementing VR more intentionally to compete in an increasingly immersive digital landscape.

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