

Factors affecting tourists' and tourism enterprises' intention to adopt virtual reality technology in Ho Chi Minh City

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Goal and objectives of the dissertation

Goal

The dissertation aims to identify and evaluate the factors influencing tourists' and tourism enterprises' intention to use virtual reality (VR) technology in Ho Chi Minh City, where VR applications in tourism remain limited and are still at an early stage of development.

Objectives

Research objective 1: To systematize theoretical and empirical studies on VR adoption in tourism and identify research gaps relevant to emerging tourism technology contexts.

Research objective 2: To develop a model integrating the Technology Readiness Index (TRI) and the Technology Acceptance Model (TAM) to explain tourists' intention to use VR technology.

Research objective 3: To develop a model integrating the Technology-Organization-Environment (TOE) framework and the Technology Acceptance Model (TAM) to explain tourism enterprises' intention to adopt VR technology.

Research objective 4: To empirically test the proposed models using survey data from 450 domestic tourists and 260 representatives of tourism enterprises in Ho Chi Minh City.

Research objective 5: To propose theoretical conclusions and practical applications for developing VR technology in tourism under conditions of limited current adoption and emerging technological readiness.

Methodology

This study employed a mixed-method research design to develop and empirically test two research models.

1. Qualitative scale development: A semi-systematic literature review, expert interviews, and group discussions with tourists were conducted to identify research gaps, refine the conceptual framework, and adapt measurement scales to the Vietnamese tourism context. This process produced a tourist scale comprising eight constructs and 27 observed variables, and an enterprise scale comprising six constructs and 21 observed variables.

2. Quantitative model testing: Preliminary quantitative testing was conducted to assess the clarity, reliability, convergent validity, discriminant validity, and multicollinearity of the measurement scales. The official survey was then administered to 450 domestic tourists and 260 representatives of tourism enterprises in Ho Chi Minh City, using convenience sampling and a combination of online and face-to-face questionnaires.

Data were analyzed using SPSS for descriptive statistics and SmartPLS 4.0 for partial least squares structural equation modelling (PLS-SEM). The structural models were evaluated through path coefficients, bootstrapping with 10,000 subsamples, coefficient of determination, effect size, predictive relevance, mediation analysis, and multi-group analysis.

Results

The study produced four main findings.

Result 1: The tourist model explained 62.8% of the variance in intention to use VR. Perceived usefulness was the strongest predictor, followed by perceived ease of use and perceived prospects of development. Perceived usefulness also strongly predicted perceived prospects of development.

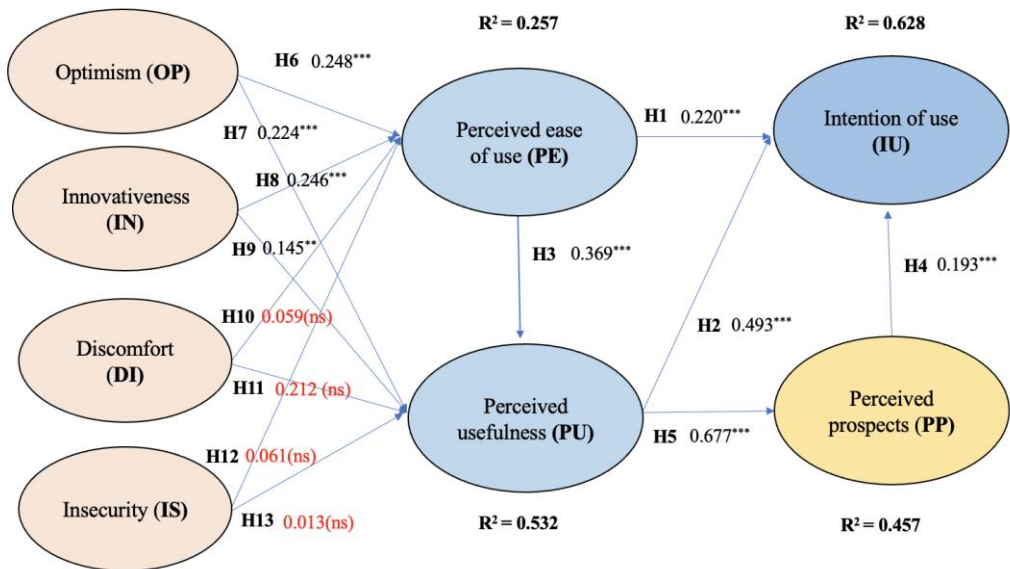


Figure 1. Empirical testing of the TRI-TAM and perceived prospects of development model.

Result 2: Tourists' positive technology readiness significantly shaped their acceptance of VR. Optimism and innovativeness had positive effects on both perceived usefulness and perceived ease of use. By contrast, discomfort and insecurity did not significantly affect tourists' perceptions of VR.

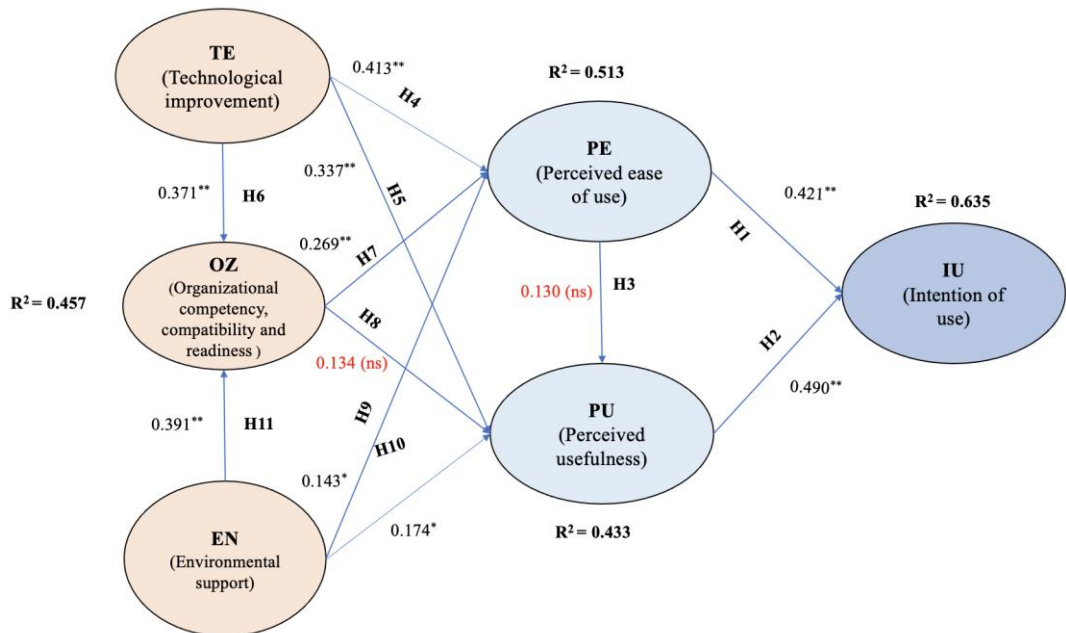


Figure 2. Empirical testing of the TOE-TAM model.

Result 3: The enterprise model explained 63.5% of the variance in intention to use VR. Perceived usefulness and perceived ease of use both had significant positive effects on enterprises' intention to adopt VR. However, perceived ease of use did not significantly influence perceived usefulness in the enterprise model.

Result 4: Technological improvement was the strongest antecedent of enterprises' perceived usefulness and perceived ease of use, followed by organizational readiness and external environmental support. Mediation analysis confirmed that perceived usefulness and perceived ease of use mediated the relationships between readiness factors and intention in both models. Multi-group analysis further indicated that demographic characteristics mattered for tourists, while charter capital mattered for enterprises.

Theoretical conclusions

The dissertation makes five main theoretical contributions.

1. The dissertation develops and validates two empirical models for explaining virtual reality (VR) adoption in a tourism context where current applications remain limited and technological readiness is still emerging: a model integrating the Technology Readiness Index (TRI) and the Technology Acceptance Model (TAM) for tourists, and a model integrating the Technology–Organization–Environment (TOE) framework and TAM for tourism enterprises.
2. The findings confirm that perceived usefulness and perceived ease of use are key predictors of intention to use VR for both tourists and tourism enterprises, even in a destination where VR has not yet become a mature or widely adopted tourism technology (Huang et al., 2023; Iftikhar et al., 2023; Israel et al., 2019; Teng et al., 2025; Zhang & Hwang, 2024).
3. The study identifies different adoption mechanisms on the demand and supply sides: tourists' intention is mainly shaped by optimism, innovativeness, perceived usefulness, perceived ease of use, and perceived prospects of development, whereas enterprises' intention is mainly shaped by technological improvement, organizational readiness, external environmental support, perceived usefulness, and perceived ease of use (Aljaroodi et al., 2023; Bryan & Zuva, 2021; Legesse et al., 2024; Teng et al., 2025; Zhang & Hwang, 2024).
4. Perceived prospects of development is introduced as a context-sensitive construct for explaining tourists' intention to use VR in an emerging tourism technology market, where the technology remains underdeveloped, unevenly available, and not yet fully integrated into destination experiences.
5. The dissertation advances a supply-demand perspective in VR tourism research by showing that adoption depends not only on tourists' willingness to use the technology but also on enterprises' capacity to implement it under conditions of limited technological maturity, organizational constraints, and evolving external support.

Practical Applications of the Dissertation

The dissertation provides five practical applications.

1. Tourism policymakers can use the findings to design smart tourism and digital transformation policies that fit the current condition of Ho Chi Minh City, where VR applications in tourism are still limited and require staged development.

2. Tourism enterprises can use the results to prioritize VR products that are useful, easy to use, and feasible for implementation under existing technological, financial, and organizational constraints.
3. Technology providers can use the findings to improve the usability, compatibility, affordability, and business applicability of VR solutions for tourism enterprises that are still at an early stage of digital adoption.
4. Destination managers can apply VR selectively to destination promotion, trip planning, heritage interpretation, accessibility enhancement, and complementary experiences, rather than treating it as a fully substitutive form of tourism.
5. VR development should begin with pilot applications targeting tourists with higher optimism, innovativeness, and stronger perceived prospects of development, while gradually strengthening enterprise readiness and external support systems.

Content of the dissertation

Abstract of Chapter 1

Chapter 1 reviews international and Vietnamese studies on VR technology in tourism. It identifies major research themes, including technology adoption, augmented reality, virtual tourism, smart tourism, cultural and heritage applications, and tourism promotion. The chapter shows that global research on VR in tourism has expanded rapidly, especially after the COVID-19 pandemic. However, research in Vietnam remains limited, mostly descriptive, and rarely develops empirical models for explaining adoption behavior. This chapter establishes the research gap and justifies the need to examine VR adoption in Ho Chi Minh City, where tourism digital transformation is encouraged but VR applications remain limited and emergent.

Abstract of Chapter 2

Chapter 2 presents the theoretical foundation and research models. It defines key concepts, including VR technology, virtual tourism, intention to use, tourists, and tourism enterprises. The chapter explains the TAM, TRI, TOE framework, and resource-based view. Based on these foundations, two models are developed: a TRI-TAM model with 13 hypotheses for tourists and a TOE-TAM model with nine hypotheses for tourism enterprises. The chapter provides the conceptual basis for examining VR adoption from both demand-side and supply-side perspectives in an early-stage tourism technology context.

Abstract of Chapter 3

Chapter 3 describes the research site and methodology. Ho Chi Minh City was selected because it is a major tourism center in Vietnam with strong potential for digital transformation, while VR applications in its tourism sector remain limited, fragmented, and at an early stage of development. The study uses a mixed-method design, including literature review, qualitative exploration, preliminary quantitative testing, official survey, and qualitative interpretation. Expert interviews and group discussions were used to refine the measurement scales. The official survey included 450 domestic tourists and 260 representatives of tourism enterprises. Data were analyzed using SPSS and SmartPLS 4.0 through partial least squares structural equation modelling (PLS-SEM).

Abstract of Chapter 4

Chapter 4 presents the empirical findings. For tourists, the TRI-TAM model explains 62.8% of the variance in intention to use VR. Perceived usefulness, perceived ease of use, and perceived prospects of

development positively affect intention. Optimism and innovativeness positively influence perceived usefulness and perceived ease of use, while discomfort and insecurity are not significant. For enterprises, the TOE-TAM model explains 63.5% of the variance in intention to use VR. Perceived usefulness and perceived ease of use positively affect intention, while technological improvement, organizational readiness, and external environmental support positively influence enterprise perceptions. The chapter also reports mediation and multi-group analysis results.

Abstract of Chapter 5

Chapter 5 discusses the findings and develops managerial implications. It confirms that tourists' intention to use VR is mainly shaped by perceived usefulness, perceived ease of use, perceived prospects of development, optimism, and innovativeness. For enterprises, intention is mainly shaped by perceived usefulness, perceived ease of use, technological improvement, organizational readiness, and external support. The chapter emphasizes that VR tourism in Ho Chi Minh City requires alignment between tourist readiness and enterprise adoption capacity under conditions of limited technological maturity. It proposes implications for policymakers, destination managers, tourism enterprises, and technology providers, and argues that VR should be integrated gradually into smart tourism and digital transformation strategies.

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