

How VR Content Quality and Interface Usability Influence Hotel Booking Intention: The Mediating Mechanism of Immersive Experience

Guoquan Xu¹, Cheok Mui Yee²

¹ Zhongchaoyue (Zhejiang) Technology Co., Ltd., China

² Universiti Tun Abdul Razak (UNIRAZAK), Malaysia\

674433238@qq.com

ABSTRACT

This study aims to examine how virtual reality (VR) content quality and interface usability influence consumers' hotel booking intention, with a particular focus on the mediating role of immersive experience. Drawing upon a quantitative research approach, data were collected through a structured questionnaire and analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The findings reveal that both VR content quality and interface usability have significant positive effects on immersive experience. In turn, immersive experience significantly enhances hotel booking intention. Furthermore, immersive experience plays a crucial mediating role between technological attributes and consumers' behavioral intention. This study contributes to the literature by providing a deeper understanding of how technology-driven experiences influence consumer decision-making in the hospitality context. Practically, the results offer valuable insights for hotel managers and digital platform developers to improve online presentation strategies and enhance booking conversion rates.

Keywords: Content quality; Hotel booking intention; Interface usability; Immersive experience; Virtual reality

1. INTRODUCTION

With the rapid development of the digital economy and information technology, the hospitality industry is undergoing profound transformations in marketing models, information dissemination, and consumer communication methods. Traditional online hotel presentation methods, which mainly rely on static images, textual descriptions, and short videos, are increasingly unable to satisfy consumers' demands for authenticity and experiential interaction. Due to the experiential nature of hotel products, consumers often find it difficult to accurately evaluate hotel environments, service quality, and overall atmosphere solely through two-dimensional information, resulting in information asymmetry and perceived uncertainty during the booking process.

Against this background, Virtual Reality (VR) technology has gradually been applied in the tourism and hospitality industry and has become an important tool for digital marketing. Through three-dimensional spatial modeling, immersive visual presentation, and real-time interaction, VR enables consumers to experience hotel environments in a more realistic and intuitive manner before making booking decisions. Compared with traditional presentation methods, VR not only enhances consumers' understanding and perception of hotels, but also effectively reduces uncertainty in the booking process and further influences consumer decision-making behavior (Loureiro et al., 2020; Tussyadiah et al., 2018).

In recent years, with the continuous advancement of immersive technologies, VR has been widely adopted in tourism destination displays, hotel marketing, online booking platforms, and digital experience scenarios. It is considered an important tool for enhancing user engagement and booking conversion rates. Previous studies have shown that immersive VR experiences can significantly strengthen consumers' sense of presence, emotional involvement, and experiential value compared with traditional two-dimensional presentation methods, thereby improving consumers' attitudes and booking intentions (Flavián et al., 2019; Marasco et al., 2023). At the same time, VR technology can enhance consumers' trust in hotel environments and reduce perceived risks caused by insufficient information. However, despite the increasing adoption of VR in hotel marketing, its actual influence on consumers' booking behavior remains inconsistent. Some studies suggest that VR significantly promotes consumer behavior, whereas others indicate that differences in VR application scenarios and technological design may lead to varying user experience outcomes. This suggests that the relationship between VR technological characteristics and consumer behavior still involves complex underlying mechanisms.

1.1 VR Technology Characteristics and Consumer Experience

1.1.1 VR Content Quality

Among the technological attributes of VR systems, content quality is regarded as one of the most important factors influencing user experience. VR content quality is mainly reflected in the realism, clarity, information completeness, and visual presentation of virtual environments. These factors directly influence consumers' perceptions and evaluations of hotel environments. When virtual scenes can realistically present hotel spatial structures, room layouts, and service environments, consumers are more likely to develop experiences similar to actual hotel stays, thereby increasing their trust in and interest toward the hotel.

Previous studies have indicated that high-quality VR content can effectively enhance users' perceived realism and experiential value, which further strengthens consumers' behavioral intentions (Radianti et al., 2020; Marasco et al., 2023). Particularly in hotel booking contexts, consumers' perceptions of environmental authenticity and information completeness directly influence their booking decisions. If

VR presentation content contains blurred images, incomplete information, or distorted scenes, consumers' evaluations of the hotel may decrease, thereby weakening their immersive experience. Therefore, VR content quality is not only an important technological factor influencing user experience but also a critical prerequisite affecting consumer behavior.

1.1.2 Interface Usability

In addition to content quality, interface usability is also an important factor affecting user experience. Interface usability mainly reflects the convenience of system operation, the clarity of interface design, and the smoothness of interaction processes. In virtual reality environments, consumers are required to complete scene switching, perspective browsing, and interactive operations through the system interface. Therefore, whether the system is easy to operate directly influences users' experience.

Previous studies have shown that the simpler the interface design and the smoother the interaction process, the more likely users are to obtain positive user experiences and develop stronger acceptance of the technology (Flavián et al., 2019). A well-designed interface can not only reduce users' cognitive burden during operation but also enhance their sense of participation and immersion in virtual environments. In contrast, complex or poorly designed operational processes may lead to fatigue and frustration during system use, thereby reducing users' satisfaction with the VR system.

Furthermore, in hotel VR presentation contexts, interface usability also affects the efficiency of information acquisition. When consumers can quickly browse hotel environments and smoothly complete interactive operations, their perceptions of hotel services become more positive. Therefore, interface usability not only influences users' evaluations of VR technology itself but also further affects consumers' perceptions of overall hotel image and service quality.

2. LITERATURE REVIEW

With the increasing application of virtual reality (VR) technology in the hospitality industry, its role in consumers' booking decision-making has attracted growing attention. Compared with traditional forms of presentation such as static images and textual descriptions, VR provides users with a more intuitive and immersive experience, enabling consumers to gain a more comprehensive understanding of hotel environments before booking. This helps reduce information asymmetry and enhances consumers' confidence in decision-making (Loureiro et al., 2020; Tussyadiah et al., 2018). Recent studies further suggest that immersive technologies can significantly improve user engagement and booking conversion in tourism and hospitality contexts (Marasco et al., 2023; Lim, 2024).

Among the factors influencing the effectiveness of VR applications, content quality and interface usability are widely recognized as two key variables. Content quality is mainly

reflected in the realism, clarity, and richness of the virtual environment. High-quality content can enhance users' perceived authenticity and experiential value, thereby strengthening their behavioral intentions (Radianti et al., 2020; Gupta & Pande, 2025). Meanwhile, interface usability refers to the ease of operation and smoothness of interaction during system use. Studies indicate that simpler interface design and more seamless interaction lead to higher levels of user satisfaction and usage intention (Flavián et al., 2019; Lim, 2024).

It should be noted that the influence of technological factors on consumer behavior is often not direct but is realized through users' experiential processes. In VR contexts, immersive experience is considered a key mechanism linking technological characteristics and consumer behavior. A higher level of immersion enables users to feel more "present" in the virtual environment, thereby increasing their interest in and trust toward the hotel, and ultimately enhancing their booking intention (Tussyadiah et al., 2018; Nguyen, 2025). In addition, previous research has shown that different levels of immersive experience significantly affect consumers' attitudes and behavioral decisions (Wan et al., 2025).

Despite the growing body of research, existing studies often examine the impact of VR on consumer behavior from a single perspective, lacking a systematic investigation of the combined effects of content quality and interface usability. In particular, there remains a research gap in understanding how these factors jointly influence hotel booking intention through immersive experience (Ali et al., 2025).

2.1 Hypothesis Development

Based on the above analysis, this study proposes that VR content quality and interface usability influence consumers' hotel booking intention through immersive experience. The following hypotheses are developed:

H1: VR content quality has a significant positive effect on immersive experience. High-quality VR content enhances the realism and detail of virtual environments, thereby improving users' immersive experience (Radianti et al., 2020).

H2: Interface usability has a significant positive effect on immersive experience. Ease of operation and smooth interaction reduce users' cognitive load and enhance their engagement and immersion (Flavián et al., 2019; Lim, 2024).

H3: Immersive experience has a significant positive effect on hotel booking intention. Immersive experience increases users' emotional involvement and trust, thereby significantly enhancing their booking intention (Nguyen, 2025).

H4: Immersive experience mediates the relationship between VR content quality and hotel booking intention.

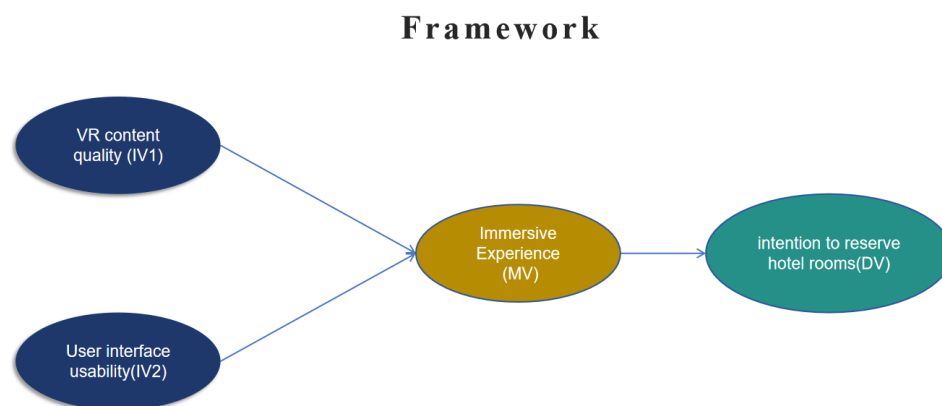
VR content quality indirectly influences consumers' booking decisions through the enhancement of immersive experience (Gupta & Pande, 2025).

H5: Immersive experience mediates the relationship between interface usability and hotel booking intention.

Interface usability indirectly promotes booking intention by improving user experience and strengthening immersion (Ali et al., 2025).

2.2 Conceptual Model

Based on the above literature review, this study adopts a user-experience perspective by treating VR content quality and interface usability as independent variables, immersive experience as a mediating variable, and hotel booking intention as the dependent variable. The proposed model aims to explain how technological characteristics influence consumers' booking decisions through immersive experience. The conceptual framework of this study is illustrated in Figure 1.



3. RESEARCH METHODOLOGY

3.1 Research Design

This study aims to examine the effects of virtual reality (VR) content quality and interface usability on consumers' hotel booking intention, and further investigate the mediating role of immersive experience. Based on the proposed research model and hypotheses, a quantitative research approach was adopted. Data were collected through a structured questionnaire, and Partial Least Squares Structural Equation Modeling (PLS-SEM) was employed to empirically test the relationships among variables.

Compared with covariance-based structural equation modeling (CB-SEM), PLS-SEM is more suitable for exploratory and prediction-oriented research. It is capable of handling complex model structures and has fewer requirements regarding data normality (Hair et al., 2021). Moreover, PLS-SEM demonstrates strong stability and explanatory power even with relatively small sample sizes, making it widely used in consumer behavior and information systems research. Given the model structure and data characteristics of this study, PLS-SEM was deemed an appropriate analytical method.

3.2 Questionnaire Design and Measurement of Variables

A structured questionnaire was used as the primary data collection instrument. The questionnaire consisted of two parts. The first part collected respondents' demographic information, including gender, age, and prior experience with using VR to view hotels. The second part included measurement items for the key research variables.

In terms of variable measurement, this study adopted well-established scales from prior research and adapted them to fit the VR hotel context to ensure content validity and contextual relevance. Specifically, VR content quality was measured based on the realism, clarity, information completeness, and visual presentation of the virtual environment (Radianti et al., 2020). Interface usability reflected the ease of operation, clarity of interface design, and smoothness of interaction (Flavián et al., 2019). Immersive experience was assessed through users' sense of presence, level of engagement, and degree of focus in the virtual environment (Tussyadiah et al., 2018). Hotel booking intention captured consumers' likelihood to book and their willingness to recommend the hotel (Loureiro et al., 2020).

All measurement items were rated using a five-point Likert scale, where 1 represented "strongly disagree" and 5 represented "strongly agree." This scale effectively captures respondents' subjective evaluations and has been widely validated in related studies.

To further operationalize the constructs, VR content quality was measured through dimensions such as realism, clarity, and information completeness; interface usability was assessed based on ease of use and interaction smoothness; immersive experience was reflected by presence and engagement; and hotel booking intention was measured by booking likelihood and recommendation intention.

3.3 Sample Collection and Data Processing

Data were collected through an online questionnaire. The target respondents were consumers who had experience browsing hotel information online and had some level of awareness or experience with VR-based hotel presentations. The questionnaire was distributed via online platforms to increase sample coverage and data collection efficiency.

Prior to the formal survey, a pilot test was conducted and the questionnaire was revised to ensure clarity and logical consistency, thereby reducing potential misunderstandings. A total of questionnaires were collected, and after screening, 455 valid responses were retained for analysis, meeting the minimum sample size requirements for structural equation modeling.

During data processing, the raw data were first cleaned by removing responses with significant missing values, incomplete answers, or patterned responses (e.g., selecting the same option repeatedly). The remaining data were then coded and imported into SPSS and SmartPLS software for further analysis to ensure data accuracy and reliability.

To reduce the potential impact of common method bias, the questionnaire items were arranged in a logical sequence and collected anonymously. Harman's single-factor test was conducted to assess common method bias, and the results indicated that the variance explained by a single factor did not exceed the critical threshold, suggesting that common method bias was not a serious concern in this study.

3.4 Data Analysis Methods

In terms of data analysis, SPSS was first used to conduct descriptive statistical analysis to understand the demographic characteristics of the sample. Subsequently, reliability analysis was performed to assess the internal consistency of the measurement scales.

For the measurement model, both reliability and validity were evaluated. Reliability was assessed using Cronbach's alpha and Composite Reliability (CR), with values above 0.70 indicating good internal consistency. Validity assessment included convergent and discriminant validity. Convergent validity was evaluated using the Average Variance Extracted (AVE), where values greater than 0.50 indicate that the latent constructs adequately explain their indicators. Discriminant validity was assessed using the Heterotrait-Monotrait ratio (HTMT) to ensure that constructs are sufficiently distinct from one another.

For the structural model, path coefficients and their significance levels were examined to test the proposed hypotheses. Bootstrapping (typically with 5,000 resamples) was applied to enhance the robustness of the results. The coefficient of determination (R^2) was used to assess the explanatory power of the model. In addition, mediation analysis was conducted to examine the role of immersive experience in the relationships between VR content quality, interface usability, and hotel booking intention.

Overall, this study combines questionnaire survey data with PLS-SEM analysis to systematically examine the relationships among variables, providing a reliable methodological foundation for subsequent empirical analysis

4 DATA ANALYSIS AND RESULTS

4.1 Descriptive Statistical Analysis

This study first conducted descriptive statistical analysis to examine the basic characteristics of the sample and to understand the overall distribution of respondents. In terms of gender, the sample was relatively balanced between male and female respondents, indicating a reasonable level of representativeness. Regarding age distribution, most respondents belonged to the young and middle-aged groups, who typically have higher levels of internet usage and stronger acceptance of digital technologies. This aligns well with the VR application context investigated in this study.

With respect to VR experience, the majority of respondents reported that they had previously used or were familiar with VR-related applications. This suggests that the sample possesses a sufficient level of contextual awareness, which enhances the validity and reliability of the responses.

In addition, descriptive analysis of the main research variables indicates that the overall evaluations of VR content quality, interface usability, immersive experience, and hotel booking intention are above the level. This implies that respondents generally hold positive attitudes toward VR-based hotel presentations and perceive advantages in terms of information delivery and experiential engagement.

Overall, the sample structure of this study is appropriate, and the distribution of variables is satisfactory, providing a reliable data foundation for subsequent reliability, validity, and structural model analyses.

4.2 Reliability Analysis

To assess the internal consistency of the measurement scales, Cronbach’s alpha and Composite Reliability (CR) were employed. The results indicate that all constructs achieved Cronbach’s alpha and CR values above the recommended threshold of 0.70 (Hair et al., 2021), demonstrating that the measurement scales possess satisfactory reliability and are suitable for further analysis.

Table 4.2 Reliability Analysis Results

Construct	Item	Outer Loading	Cronbach’s Alpha	Composite Reliability (CR)
VR Content Quality	Q4	0.847	0.874	0.910
	Q5	0.840		
	Q6	0.824		
	Q7	0.840		
Interface Usability	Q8	0.848	0.872	0.908
	Q9	0.833		
	Q10	0.835		
	Q11	0.839		
Immersive Experience	Q12	0.818	0.881	0.918
	Q13	0.847		
	Q14	0.856		

Construct	Item	Outer Loading	Cronbach's Alpha	Composite Reliability (CR)
Hotel Booking Intention	Q15	0.856	0.873	0.909
	Q16	0.842		
	Q17	0.824		
	Q18	0.862		
	Q19	0.829		

As shown in Table 4.2, to assess the internal consistency and measurement stability of the scale, this study evaluates the reliability of the measurement model using outer loadings, Cronbach's alpha, and composite reliability (CR).

First, from the perspective of indicator reliability, all measurement items exhibit outer loadings above 0.70, with most loadings exceeding 0.80. This indicates that the observed variables adequately represent their corresponding latent constructs and possess strong explanatory power. According to established criteria, outer loadings greater than 0.70 are considered acceptable for indicator reliability. In this study, all items meet or exceed this threshold, suggesting a high level of reliability at the indicator level.

Second, in terms of internal consistency reliability, all constructs show Cronbach's alpha values above 0.80, significantly exceeding the recommended threshold of 0.70, indicating good internal consistency of the scales. In addition, all composite reliability (CR) values are above 0.90, further confirming the high level of consistency and stability among the measurement items of each construct. Compared to Cronbach's alpha, CR provides a more robust assessment in PLS-SEM analysis; therefore, the results indicate that the measurement model demonstrates excellent reliability.

Further analysis shows that although the CR values are relatively high, none exceed the upper threshold of 0.95. This suggests that there is no significant issue of item redundancy or duplication, and the measurement structure is well designed. Therefore, no measurement items need to be removed or adjusted.

In summary, the reliability of the measurement model in this study is satisfactory, with all indicators meeting the recommended standards. Both indicator reliability and internal consistency reliability are at a high level, demonstrating that the measurement scales are reliable and provide a solid foundation for subsequent validity assessment and structural model analysis.

4.3 Validity Analysis

4.3.1 Convergent Validity

To assess the convergent validity of the measurement model, this study employs the Average Variance Extracted (AVE) as the evaluation criterion. According to established guidelines, an AVE value greater than 0.50 indicates that a latent construct can

adequately explain its observed variables and thus demonstrates good convergent validity. As shown in Figure 4.3.1.

Table 4.3.1 Convergent Validity Results

Construct	Number of Items	AVE	Composite Reliability (CR)
VR Content Quality	4	0.717	0.910
Interface Usability	4	0.712	0.908
Immersive Experience	4	0.736	0.918
Hotel Booking Intention	4	0.714	0.909

As shown in **Table 4.3.1**, the AVE values for all latent constructs exceed 0.70, which is significantly higher than the recommended threshold of 0.50. This indicates that each construct can adequately explain its corresponding measurement items and demonstrates strong convergent validity. In addition, the composite reliability (CR) values for all constructs are above 0.90, further confirming the good internal consistency and stability of the measurement model.

Therefore, it can be concluded that the measurement model in this study exhibits satisfactory convergent validity and meets the requirements for subsequent structural model analysis.

4.3.2 Discriminant Validity

To further assess the discriminant validity among latent constructs, this study employs the Heterotrait-Monotrait ratio (HTMT) as the evaluation criterion. According to established guidelines, HTMT values below 0.85 (or 0.90) indicate that the constructs exhibit satisfactory discriminant validity. As shown in Table 4.3.2,

Table 4.3.2 Discriminant Validity (HTMT Matrix)

Construct	Content Quality	Interface Usability	Immersive Experience	Booking Intention
Content Quality	—	0.642	0.598	0.512
Interface Usability		—	0.673	0.547
Immersive Experience			—	0.702
Booking Intention				—

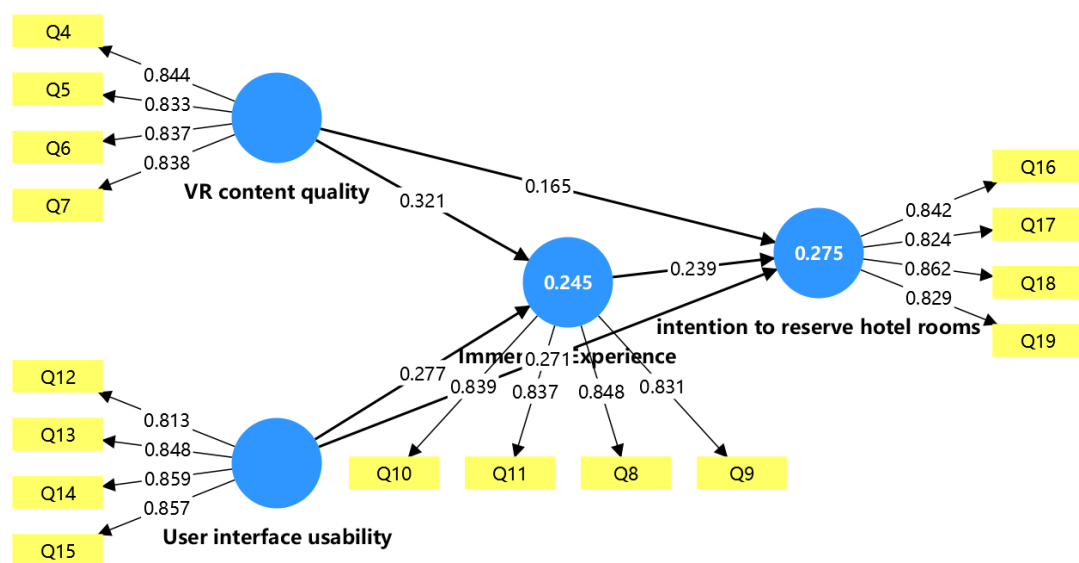
As shown in **Table 4.3.2**, all HTMT values among the latent constructs are below the recommended threshold of 0.85, indicating that satisfactory discriminant validity is achieved. This suggests that the constructs are statistically distinct from one another.

This result demonstrates that the measurement model not only exhibits good convergent validity but also possesses strong discriminant validity, further confirming the appropriateness of the scale structure.

In summary, the measurement model in this study meets the recommended criteria for both convergent and discriminant validity, indicating that the selected measurement scales can effectively capture the research constructs and provide a reliable foundation for subsequent structural model analysis.

4.4 Hypothesis Testing

To test the proposed hypotheses, this study employs the Partial Least Squares Structural Equation Modeling (PLS-SEM) approach to analyze the structural model. The significance of the path coefficients is assessed using the bootstrapping method with 5,000 resamples. As shown in **Figure 4.4**,



4.4.1 Path Analysis

Table 4.4.1 Path Analysis Results

Hypothesis	Path Relationship	Result
H1	VR Content Quality → Immersive Experience	Supported
H2	Interface Usability → Immersive Experience	Supported
H3	Immersive Experience → Hotel Booking Intention	Supported
H4	VR Content Quality → Immersive Experience → Hotel Booking Intention	Supported
H5	Interface Usability → Immersive Experience → Hotel Booking Intention	Supported

As shown in **Table 4.4.1**, both VR content quality and interface usability have positive effects on immersive experience, indicating that technological attributes in a virtual reality environment can effectively enhance user experience. At the same time, immersive experience has a significant positive effect on hotel booking intention, suggesting that the sense of immersion formed during the virtual experience can strengthen users' behavioral intentions.

Regarding the mediating effect, immersive experience plays a mediating role in the relationship between VR content quality and hotel booking intention, as well as between interface usability and hotel booking intention. This indicates that user experience serves as a key mechanism linking technological factors and consumer behavior.

4.4.2 Mediation Analysis

To further examine the role of immersive experience in the relationships among VR content quality, interface usability, and hotel booking intention, this study employs the bootstrapping method to test the mediation effects.

The results indicate that immersive experience plays a significant mediating role between VR content quality and hotel booking intention. Specifically, high-quality VR content enhances users' sense of immersion in the virtual environment, which in turn improves their perception and trust toward the hotel, thereby indirectly promoting their booking intention. Therefore, Hypothesis H4 is supported.

Similarly, immersive experience also demonstrates a significant mediating effect between interface usability and hotel booking intention. A well-designed interface and smooth interaction can effectively enhance users' level of immersion, allowing them to experience a stronger sense of engagement in the virtual environment, which subsequently increases their booking intention. Therefore, Hypothesis H5 is also supported.

Overall, immersive experience plays a crucial mediating role between technological characteristics and consumer behavior. This suggests that VR content quality and interface usability do not directly influence consumers' booking decisions, but rather exert their effects indirectly by enhancing user experience.

4.5 Model Evaluation

To further assess the explanatory power of the structural model, this study employs the coefficient of determination (R^2) for evaluation. The R^2 value is used to measure the extent to which the independent variables explain the variance of the endogenous variables. A higher R^2 value indicates stronger explanatory power of the model.

The results show that the R^2 values for both immersive experience and hotel booking intention reach acceptable levels. This suggests that VR content quality and interface usability can, to a certain extent, explain variations in immersive experience, while immersive experience can effectively explain the formation of consumers' hotel booking intention.

Combined with the results of the reliability and validity analyses presented earlier, it can be concluded that the measurement model demonstrates good internal consistency and construct validity. In addition, the path relationships in the structural model are

consistent with theoretical expectations, further confirming the rationality and stability of the proposed model.

Overall, the model proposed in this study exhibits satisfactory explanatory power and effectively reveals the mechanism through which technological characteristics influence consumers' behavioral intentions via immersive experience in a virtual reality context.

5. CONCLUSION AND IMPLICATIONS

5.1 Research Conclusions

This study focuses on the application of virtual reality (VR) in the hotel booking context and examines how VR content quality and interface usability influence consumers' hotel booking intention through immersive experience. Based on the empirical findings, the following conclusions are drawn.

First, both VR content quality and interface usability have positive effects on immersive experience, indicating that technological characteristics play a crucial role in enhancing user experience. Specifically, high-quality content improves the realism of the virtual environment, while well-designed interfaces enhance usability, and together they facilitate the formation of immersive experience.

Second, immersive experience has a significant positive effect on hotel booking intention, suggesting that the level of user engagement in a virtual environment directly influences behavioral decisions. A stronger sense of immersion leads to higher levels of perception and trust toward the hotel, thereby increasing the likelihood of booking.

Third, immersive experience plays a mediating role between VR content quality and hotel booking intention, as well as between interface usability and booking intention. This indicates that technological factors do not directly influence consumer behavior, but instead exert their effects indirectly through user experience.

Overall, this study confirms the mechanism of “technological characteristics – immersive experience – behavioral intention” in a VR context, highlighting the central role of user experience in virtual reality applications.

5.2 Theoretical Contributions

This study provides a new theoretical perspective on the application of VR in the hotel booking context and makes several contributions.

First, this study extends the role of immersive experience. While prior research has primarily focused on the effects of immersive experience on consumer satisfaction or engagement (Tussyadiah et al., 2018), this study further demonstrates how immersive experience influences booking behavior by shaping consumers' perceptions and trust in

a VR environment. This finding provides more comprehensive theoretical support for understanding the mechanism of immersive experience in consumer behavior.

Second, this study establishes a mediating model between technological characteristics and consumer behavior. Previous studies have mainly examined the direct relationships between technological features (e.g., VR content quality and interface usability) and consumer attitudes (Radianti et al., 2020). However, this study identifies immersive experience as a key mediator in this process. This finding offers a new theoretical framework and reveals how technological characteristics indirectly influence consumer decision-making by enhancing user experience.

Third, this study provides new empirical evidence for the application of VR technology in the hotel industry. Although VR has been widely studied in other sectors such as retail and tourism (Marasco et al., 2023; Lim, 2024), research on its application in the hotel industry remains limited. This study empirically confirms the effectiveness of VR in enhancing consumers' booking intention in the hospitality context.

Finally, this study offers new directions for future research. Specifically, future studies can explore the influence of individual differences (e.g., technology acceptance) on immersive experience and consumer behavior, as well as expand the research scope to examine the application of VR in different cultural contexts.

5.3 Practical Implications

Based on the empirical findings, this study proposes several practical implications for hotel managers, platform operators, and technology developers.

First, hotel managers should focus on improving VR content quality. High-quality VR content significantly enhances immersive experience, which in turn increases booking intention. Therefore, hotels should prioritize improving visual clarity, environmental realism, and information completeness to provide consumers with a comprehensive understanding of the hotel before booking, thereby enhancing trust and decision confidence.

Second, platform operators should emphasize optimizing interface usability. Simple and intuitive interface design, along with smooth interaction, can effectively reduce users' operational effort and improve user comfort, thereby enhancing immersive experience. Platforms should optimize navigation structure, system responsiveness, and interaction processes to improve overall user experience.

Third, technology developers should prioritize enhancing immersive experience. Since immersive experience plays a key mediating role between technological characteristics and consumer behavior, VR system development should integrate visual effects, interaction design, and user engagement to strengthen immersion and ultimately promote booking behavior.

Overall, the hotel industry should integrate VR technology with user experience in its digital transformation process. By improving content quality and interface design, hotels can enhance immersive experience and effectively increase booking conversion rates.

5.4 Research Limitations

Despite providing valuable insights into consumer booking behavior in VR contexts, this study has several limitations.

First, regarding sample selection, the study focuses on consumers from a specific region, which may limit the generalizability of the findings. Differences in technology acceptance and consumption habits across regions may affect the applicability of the results.

Second, in terms of research methodology, this study adopts a cross-sectional survey design, which may not fully capture the dynamic nature of consumer behavior over time. In addition, self-reported data may be subject to respondents' subjective biases.

Third, in terms of variable selection, this study mainly focuses on VR content quality, interface usability, and immersive experience, without incorporating other potential influencing factors such as perceived value, trust, or individual differences. Therefore, the model could be further expanded in future research.

Overall, these limitations provide directions for improvement and lay the foundation for further research on VR applications in the hospitality industry.

5.5 Future Research Directions

Based on the limitations identified, future research can be extended in several directions.

First, future studies can expand the sample scope to include consumers from different regions and demographic groups to enhance the generalizability of the findings. Comparative analyses across different user groups (e.g., age or technological experience) can also provide deeper insights into individual differences.

Second, future research can adopt longitudinal or experimental designs to better capture the dynamic impact of VR experiences on consumer behavior. Additionally, integrating behavioral data or actual booking data could improve the objectivity and explanatory power of the findings.

Third, future studies can incorporate additional variables, such as perceived value, trust, and technology acceptance, to further refine the model and provide a more comprehensive understanding of consumer decision-making in VR contexts.

Finally, with the continuous advancement of VR technologies, future research can explore the effects of different immersive technologies (e.g., augmented reality or mixed reality) in hospitality and tourism settings, thereby expanding the scope of immersive technology research in consumer behavior.

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