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Study on Virtual Tourist Experience at Three Gorges Museum in Chongqing China

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Abstract: *Based on the virtual tourist experience, this paper focuses on the virtual tourism project at the Three Gorges Museum in Chongqing China, and conducts questionnaire surveys and SPSS analysis to explore factors that influence satisfaction with the virtual tourist experience. It describes the current development status of virtual tourism at the Three Gorges Museum in Chongqing China. Lastly, the paper provides suggestions for the development of virtual tourism at the Three Gorges Museum in Chongqing China from various dimensions, including personal characteristics, information content, platform attributes, multidimensional interaction, and entertainment services. These suggestions are as follows: (1) Understand the tourists and expand dissemination; (2) Establish a diversified framework to meet the diverse needs of tourists; (3) Enhance cultural connotation and innovate cultural value; (4) Provide technical support to optimize the experience; (5) Strengthen interaction and increase tourist engagement; (6) Improve the quality of entertainment services and continuously enhance tourist enjoyment.*

Keywords: *virtual tourism; tourist experience; museum; Chongqing*

1. Introduction

Virtual tourism refers to the utilization of virtual reality technology to create or recreate a virtual tourism environment based on real-world tourist attractions. It allows visitors to customize their own routes, speed, and points of interest based on their preferences, thereby providing an online tourism experience with virtual characteristics. With the increasing maturity of global cloud computing technology, the rapid development of intelligent terminal devices, and the prevalence of mobile internet applications, the limitations of traditional tourism in terms of time and space have been surpassed, giving rise to virtual tourism as a novel form of tourism. Consequently, virtual tourism has brought new meanings, features, and manifestations to the relationship between individuals and destinations in the tourism domain. Additionally, it has pioneered a new venture for contemporary tourists to partake in immersive perception and interactive scenarios. The Three Gorges Museum in Chongqing China is responsive to the demands of the era, keeping pace with the advancements, and prioritizing a people-centric approach. Consequently, it has established a smart management platform and undertaken the development and construction of virtual tourism products. This study endeavors to provide targeted recommendations for the advancement of virtual tourism products at the Three Gorges Museum in Chongqing, China. By analyzing the current status and concerns surrounding visitor experiences, it seeks to foster the comprehensive development of digitization, intelligence, and innovation within the museum's operations.

2. Application of Methods

2.1 Research Objective

With a strong commitment to a "people-oriented" approach, this survey aims to gather valuable insights from visitors who have engaged in virtual tours of the Three Gorges Museum. By conducting on-site research and administering questionnaire surveys, the survey intends to collect primary data that pertains to the development of virtual tourism and to evaluate the level of satisfaction that visitors have experienced during their virtual tour of the museum.

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2.2 Questionnaire Design

2.2.1 Composition of the Questionnaire

The survey questionnaire consists of three parts:

a) Introduction: This section provides an overview of the survey, including information about the respondents, research objectives, researchers, and instructions for completing the questionnaire.

b) Basic Information: This section collects demographic information about the respondents, such as gender, age, occupation, and education level.

c) Research Scale: This section includes multiple dimensions of the visitor's satisfaction with their virtual tour experience, including personal characteristics, information content, platform attributes, multidimensional interactions, and entertainment services.

For this study, the research scale mainly adopts the Likert5-point scale: 1 representing "strongly dissatisfied," 2 representing "dissatisfied," 3 representing "neutral," 4 representing "satisfied," and 5 representing "strongly satisfied." The design of the research scale is primarily based on previous mature scales and relevant literature research both domestically and internationally, ensuring a comprehensive and accurate reflection of the factors influencing visitors' virtual tour experiences.

2.2.2 Scale Design

(1) Personal Characteristics.

The first factor is "personal characteristics". Virtual tourism is a new form of service for real-life tourism, providing both experiential and pre-evaluative functions[1]. This factor seeks to explore whether visitors are willing to gather travel information and have experiences through virtual tourism. The key components include "knowledge of basic internet skills," "interest in the development of virtual tourism," "willingness to engage in virtual tourism," and "trust in virtual tour experience" (refer to Table 1).

Table 1: Personal Characteristic Dimension Items

Variables	***Options***
Personal Characteristics	1. Understand basic internet skills
	2. Pay attention to the development of virtual tourism industry
	3. Willing to engage in virtual tourism
	4. Trust virtual tour experience

(2)Information Content.

The second factor is "Information Content", which focuses on the keyword "information". In the context of intelligent tourism, the richness, freshness, and accuracy of information will have a significant impact on the quality of experience for virtual tourists. Virtual tourism plays a market role by providing beneficial promotion and sales for scenic spots, hotels, travel agencies, and transportation. Additionally, there is an emphasis on providing information about local cultural features, products, and services that are of interest to tourists, highlighting the role of virtual tourism networks in service provision[2]. The main aspects are focused on "richness of travel information", "fast update of travel information", "high accuracy of travel information", and "strong uniqueness of travel information" (see Table 2).

Table 2: Information Content Dimension Items

Variables	***Options***
Information Content	1. Richness of travel information
	2. Fast update speed of travel information
	3. High accuracy of travel information
	4. Strong uniqueness of travel information

(3)Platform Attributes.

The third factor is "Platform Attributes", which reflects the level of importance virtual tourism experience regards to the technological application, security, and convenience of virtual tourism. This includes 3D real scene technology, 360-degree panoramic technology, as well as website design, animation, audio, and video technologies[3] Furthermore, virtual tourism as a form of travel requires visitors to experience it through a certain platform. The main aspects are focused on "unique and aesthetic web design", "immersive and realistic virtual reality", "secure and reliable experience process", and "convenient and quick experience method" (see Table 3).

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Table 3: Platform Attributes Dimension Items

Variables	***Options***
Platform Attributes	1. Unique and aesthetic web design
	2. Immersive and realistic virtual reality
	3. Safe and reliable experience process
	4. Convenient and quick experience method

(4)Multidimensional Interaction.

It reflects the need of virtual tourism experience for communication and interaction functionalities. Virtual tourism is not just about information acquisition, but rather a process of pleasure, relaxation, and aesthetic enjoyment, as virtual tourists explore scenic spots through computer terminals[4]. With the rapid development of mass tourism, tourists are not only recipients of information but also creators and disseminators of information[5]. Virtual tourism websites need to focus on "easy communication and acquaintance among tourists", "facilitating personalized interaction between tourists and platforms", and "facilitating feedback between tourists and museums" (see Table 4).

Table 4: Multidimensional Interaction Dimension Items

Variables	***Options***
Multidimensional Interaction	1. Easy communication and acquaintance among tourists
	2. Facilitating personalized interaction between tourists and platforms
	3. Facilitating feedback between tourists and museums

(5)Entertainment Services.

It mainly refers to the setting of online games, online activities, and audio-visual entertainment programs in virtual tourism, reflecting the tourists' demand for entertainment service functionalities[6]. In recent years, some domestic virtual tourism websites have made attempts to integrate certain virtual games into the tourism experience process to enhance the enjoyment of participants[7]. Optimal settings for entertainment services are the future development trend of virtual tourism and the key to profitability for virtual tourism websites. Based on the entertainment services offered by museums themselves, they mainly include "audio-visual programs", "educational and scientific programs", "immersive interaction", "web games", and "digital exhibition halls" (see Table 5).

Table 5: Entertainment Services Dimension Items

Variables	***Options***
Entertainment Services	1. Audio-visual programs
	2. Educational and scientific programs
	3. Immersive interaction
	4. Web games
	5. Digital exhibition halls

3. Preliminary Research

Before conducting formal research, a preliminary survey was conducted among visitors of the Chongqing China Three Gorges Museum virtual tour. The preliminary survey was conducted from February 1st to February 5th, 2023, using both field visits and online methods. A total of 100 questionnaires were distributed to the public, and 100 completed questionnaires were collected. After organizing and analyzing the questionnaire data, 5 invalid questionnaires were excluded, resulting in a final sample of 95 valid questionnaires, with an effective rate of 95%.

4. Organization and Description of Issues

4.1 Distribution and Collection of Formal Questionnaires

Tourists who have experienced virtual tourism at the Chongqing Three Gorges Museum in China were selected as the research subjects. The methods used for the survey included online media distribution, on-site distribution, and one-on-one electronic questionnaire surveys. From March 1st to March 5th, 2023, a total of 210 questionnaires were distributed, and 201 were collected. After analyzing

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and organizing the raw data, one invalid questionnaire was excluded, resulting in a final sample of 200 valid questionnaires, with a total response rate of 99%.

4.2 Descriptive Analysis of Variables in the Scale

4.2.1 Personal Characteristics

In measuring the variable of personal characteristics, it was found that respondents had a certain level of satisfaction with their personal characteristics, with an overall mean of 3.73. Respondents showed relatively lower levels of satisfaction with "concern for the development of virtual tourism industry" and "trust in virtual tourism experiences," with values of 3.57 and 3.6, respectively. However, there was relatively higher satisfaction with "willingness to engage in virtual tourism," with a value of 3.91. This indicates that the majority of respondents generally have low levels of attention and trust in virtual tourism but are curious and willing to try virtual tourism experiences. Overall, respondents showed relatively high satisfaction with their personal characteristics. (Refer to Table 6)

Table 6: Descriptive Statistics for Personal Characteristics

Variable	Option	Minimum	Maximum	Mean	Overall Mean
Personal Characteristics	Understanding basic internet knowledge	1	5	3.85	3.73
	Paying attention to the development of virtual tourism industry	2	5	3.57	
	Willingness to engage in virtual tourism	1	5	3.91	
	Trust in virtual tourism experience	1	5	3.6	

4.2.2 Information Content

In measuring the variable of information content, it was found that respondents had relatively high satisfaction with the information content presented by museums, with an overall mean of 3.84. Respondents showed relatively lower levels of satisfaction with "fast information update" and "strong uniqueness of information," with values of 3.79 and 3.83, respectively. However, there was higher satisfaction with "richness of information" and "high accuracy of information," with both values at 3.87. This indicates that museums have a good grasp of virtual tourism content and provide rich and accurate information but lack relative uniqueness and timeliness. Overall, respondents showed relatively high satisfaction with the information content. (Refer to Table 7)

Table 7: Descriptive Statistics of Information Content

Variable	Option	Minimum	Maximum	Mean	Overall Mean
Information Content	Richness of travel information	1	5	3.87	3.84
	Fast update speed of travel information	1	5	3.79	
	High accuracy of travel information	1	5	3.87	
	Strong uniqueness of travel information	1	5	3.83	

4.2.3 Platform Attributes

In the measurement of platform attributes, it was found that the respondents have a high level of satisfaction with the platform attributes of virtual museum tours, with an overall average score of 3.89. The satisfaction level for "unique and attractive website design" is relatively low, with a score of 3.84. On the other hand, there is a high level of satisfaction with both the "safe and secure user experience" and the "convenient and fast user experience," with scores of 3.91 and 3.94, respectively. This indicates that, overall, the respondents have a relatively positive evaluation of the platform attributes of virtual museum tours. (See Table 8)

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Virtual tourists, as the main participants in tourism, are not just passive recipients of virtual reality technology but active participants in an interactive process. Museums aim to create a relaxed, enjoyable, and rejuvenating tourism experience for visitors. This requires continuous improvement in virtual reality technology, as well as the humanistic care and consideration from designers[8].

Table 8: Descriptive Statistics of Platform Attribute

Variable	Option	Minimum	Maximum	Mean	Overall Mean
Platform Attribute	Unique and aesthetic web design	1	5	3.84	3.89
	Immersive and realistic virtual reality	1	5	3.87	
	Safe and reliable experience process	1	5	3.91	
	Convenient and quick experience method	1	5	3.94	

4.2.4 Multidimensional Interactivity

In the measurement of multidimensional interactivity, it was found that the respondents have relatively low satisfaction with the multidimensional interactivity of museums, with an overall average score of 3.49. The satisfaction level for "easy communication and networking among visitors" is quite low, with a score of 3.33. On the other hand, there is relatively high satisfaction with "convenient feedback between visitors and museums," with a score of 3.6.

This indicates that, overall, most respondents have relatively low satisfaction with the multidimensional interactivity. From the perspective of multidimensional interactivity, there is still significant room for improvement in virtual museum tour services. (See Table 9)

Table 9: Descriptive Statistics of Multidimensional Interaction

Variable	Option	Minimum	Maximum	Mean	Overall Mean
Multidimensional Interaction	Easy communication and acquaintance among tourists	1	5	3.33	3.49
	Facilitating personalized interaction between tourists and platforms	1	5	3.53	
	Facilitating feedback between tourists and museums	1	5	3.6	

4.2.5 Entertainment Services

Table 6: Descriptive Statistics of Entertainment Services

Variable	Option	Minimum	Maximum	Mean	Overall Mean
Multidimensional Interaction	Audio-visual programs	1	5	3.59	3.48
	Educational and scientific programs	1	5	3.45	
	Immersive interaction	1	5	3.45	
	Web games	1	5	3.32	
	Digital exhibition halls	1	5	3.58	

In the measurement of entertainment services, it was found that the respondents have relatively low satisfaction with the entertainment services of virtual museum tours, with an overall average score of 3.48. The satisfaction level for "web-based games" is quite low, with a score of 3.32. On the other hand, there is relatively higher satisfaction with "audio-visual programs" and "digital exhibition halls," with scores of 3.59 and 3.58, respectively.

This indicates that, overall, the respondents have a lower evaluation of the entertainment services of virtual museum tours. (See Table 10)

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5. Conclusions and Recommededations

This research examines the current status of virtual tourism development at the Three Gorges Museum in Chongqing, China, and conducts research on virtual tourism experiences for visitors. Through the distribution of questionnaires both online and offline, an in-depth analysis of the virtual tourism experiences of visitors to the Three Gorges Museum is carried out, identifying the existing problems with visitor experiences. Finally, research conclusions are drawn from five dimensions: individual characteristics, information content, platform attributes, multidimensional interaction, and entertainment services. Corresponding recommendations and strategies are provided.

5.1 Explore new application scenarios and enrich the supply of tourism products

Virtual tourism, driven by continuously advancing high-tech, can promote the supply of physical tourism products and enhance the experiential effect of physical tourism. Continued development of new application scenarios for "virtual tourism plus historical sites" and create immersive experiences that align with the themes. For example, using virtual sightseeing technology to restore damaged historical sites, showcase the appearance of these sites, and present areas that are not accessible to the public due to conservation reasons, etc.

5.2 Putting "tourists" at the center and offering personalized leisure experiences

As the popularity of virtual tourism grows, standardized virtual tourism products will no longer be able to meet the needs of certain special groups. Museums, in essence, prioritize meeting the needs of their visitors. Therefore, tourism companies must accurately position their target markets and create distinctive tourism products[9]. Based on this, research should focus on areas such as "study tours" and "well-being" for young people, as well as "online" and "health" for older adults. Keeping up with the times, timely introduce products that have personalized and themed immersive experiences.

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References

[1] Hu, F., & Zhang, J. (2013). Study on Factors Influencing the Satisfaction of Virtual Tourism Experiences. Journal of Hubei University, 2013.
[2] Caciora Tudor, et al.(2021).The Use of Virtual Reality to Promote Sustainable Tourism: A Case Study of Wooden Churches Historical Monuments from Romania REMOTE SENSING. Remote Sensing , 13(9): 1758.
[3] Guo, J. (2022). Research on the Influence of Virtual Tourism Experience on Intention for Physical Travel Based on the SOR Theory. Shanghai Normal University.
[4] Hou Tingfei. (2021).Virtual Tourism Simulation System Based on VR Technology. Journal of Physics: Conference Series. 1881(3):032084
[5] Xiong Wei, YE Linwei.(2011) .A study on function evaluation of virtual tour websites in China. Human Geography, 26(2): 154-160.
[6] Feng, N., et al. Optimization of Online Service Experience in Museums Based on Audience Demands. Science Education and Museums, 7(03), 216-232.
[7] Ren, G., & Xu, X. (2021). Path Thinking on Promoting the Modernization of China's Tourism Industry through Intelligent Cultural Tourism. In Proceedings of the 2021 China Tourism Science Annual Conference: Tourism and the New Development Pattern in the New Development Pattern (581-592). Chinese Academy of Tourism Research.
[8] Zhang, H. (2020). Making Museums "Come Alive" - Taking the Exhibitions and Activities of Shanxi Museum as an Example. Cultural Relics Appraisal and Appreciation, (22), 87-89.
[9] Capotorto Salvatore, Lepore Maria, Varasano Antonietta.(2021).A Virtual Space Built on a Canvas Painting for an "Augmented" Experience to Catch the Artist's Message. ISPRS International Journal of Geo-Information. 10(10), 641