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Study on Consumer Behavior in Immersive Tourism Using the Theory of Planned Behavior

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Abstract: *Digital technology empowerment will become an important direction to promote the high-quality development of the cultural and tourism industry at present and in the future. Immersive tourism is a form of tourism that combines digital technology and creativity by creatively reshaping cultural resources to provide full-sensory interactive experiences that enable visitors to deeply engage and enjoy unique travel experiences. This paper takes tourists who have experienced immersive tourism and potential immersive tourists who know about immersive tourism as the research objects. Based on the theory of planned behavior, this paper introduces the variable of appeal of immersive tourism, and studies the influencing factors of behavioral intention of immersive tourism through hierarchical regression. The results suggest: (1) Consumers' attitudes, subjective norms and perceptual behavioral control have significant positive effects on immersive travel intention. The predictive power of the three factors on the intention of immersive travel is 46.9%, and the influence of attitude, perceived behavior control and subjective norms on the intention decreases successively. (2)The appeal of immersive tourism has a significant positive impact on immersive tourism intention. Appeal can explain 8.1% of travel intention.*

Keywords: *Immersive tourism; The appeal of immersive tourism; Tourism intention; Theory of planned behavior*

1. Introduction

Immersive tourism is a form of tourism that combines digital technology and creativity by creatively reshaping cultural resources to provide full-sensory interactive experiences that enable visitors to deeply engage and enjoy unique travel experiences. For example, Tang Dynasty Never Nights City creates an immersive experience project based on the historical and cultural background of the Tang Dynasty. During the day, Tang Dynasty Never Nights City is a tourist appeal, leisure consumption and space, but with the technology of sound and electricity, it turns into a space-time tunnel at night, so that tourists can immerse themselves in the Tang Dynasty.

The Central Economic Work Conference called for actively cultivating "new consumption growth points" such as cultural and tourism in 2024. As the tourism market continues to heat up, immersive tourism is a powerful way to enhance high-quality products and upgrade consumer experience by realizing multi-scene flow, multi-role playing, multi-sensory experience and multi-technology application through service or sound and optoelectronics. In this context, although immersive tourism experiences are being promoted everywhere, existing projects are uneven and there is still room for iteration and upgrading.[1] Therefore, it is of great significance to study the influencing factors of consumers' behavioral intention of immersive tourism and put forward corresponding countermeasures and suggestions to promote the development of immersive tourism and cultivate new consumption growth points.

2. Theoretical Basis and Research Hypothesis

In the existing research at home and abroad, the theory of planned behavior has been applied and developed in different situations of tourism research. Although the correlation between travel intention and actual travel choice behavior of new concepts such as smart tourism and global tourism is still valid. [2]The theory of planned behavior holds that individual behavior, especially behavioral intention, determines the outcome. Individual behavioral intention is affected by three variables: behavioral attitude, subjective norm, and perceived behavioral control. The more positive the attitude is, the

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greater the support of others around, the stronger the perceived behavioral control is, and the greater the behavioral awareness is, and vice versa. Behavioral attitude mainly reflects an individual's evaluation of the degree of liking for a certain behavior in a specific situation and is an important internal decisive factor affecting the occurrence of individual behavioral intention. Subjective norms mainly reflect the external social pressure that an individual faces when implementing a certain behavioral decision, and also refer to the influence of important others or organizations around the individual on their decision-making behavior. Perceived behavioral control mainly reflects an individual's perception of the difficulty of completing a specific behavior, and is an individual's perception of the factors that promote or hinder the execution of a behavior. In this theoretical model, behavioral intentions are mainly influenced by individual attitudes, subjective norms, and perceived behavior control, reflecting the extent to which an individual is willing to engage in a particular behavior, thus affecting the individual's ultimate actions. Considering the characteristics of immersive tourism integrating technology and culture, this paper will add the variable of appeal of immersive tourism to improve the predictive power of the model. The appeal of immersive tourism mainly refers to the spiritual connotation of tourist appeals, the degree of appeal of interactive experience and scene layout to tourists. Compared with traditional tourism, immersive tourism can provide richer and deeper tourism experience, which can stimulate tourists' willingness to spend more. Therefore, its appeal will affect tourists' intention of immersive tourism. Accordingly, this paper puts forward the following hypothesis:

H1: Consumers' attitude towards immersive tourism has a positive and significant impact on their immersive tourism intention.

H2: Consumers' subjective norms of immersive tourism have a positive and significant impact on their immersive tourism intention.

H3: Consumers' perceived behavioral control of immersive tourism has a positive and significant impact on their immersive tourism intention.

H4: The appeal of immersive tourism perceived by consumers has a positive and significant impact on their immersive tourism intention.

To sum up, the model of this study is shown in Figure 1.

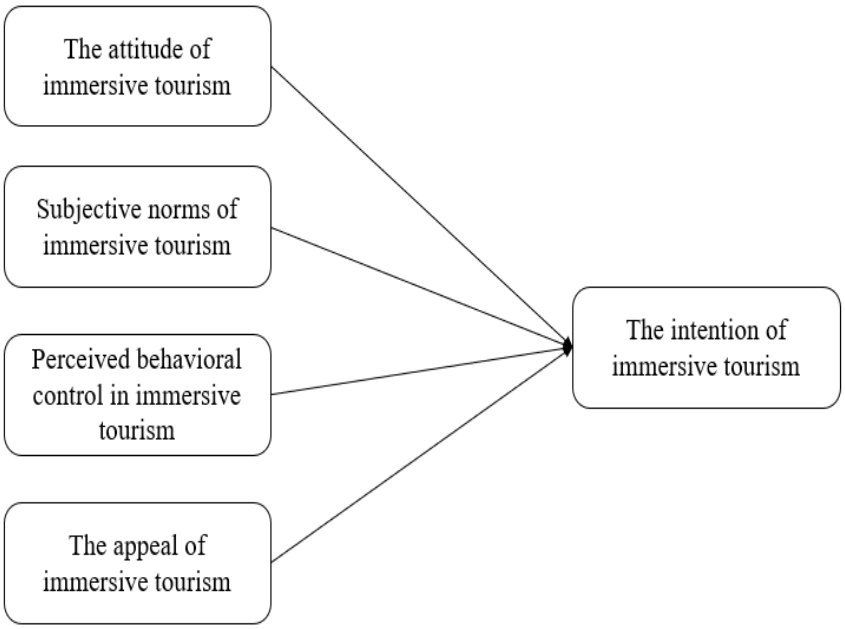

Figure 1: Theoretical model of this study

3. Research Design

3.1. Questionnaire Design

The first few items of the questionnaire are surveys on the gender, age, education level, average monthly income and understanding of immersive tourism of the respondents. The design of the scale

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draws on the existing research results, among which the attitude of immersive tourism mainly refer to the scale designed by Kim[3], subjective norms and perceived behavior control mainly refer to the theory of planned behavior scale designed by Ajzen and Fishbein[4], and the appeal of immersive tourism mainly refers to the design items of Tao Rui[5]. The items in the scale are measured by the 5-point Likert scale, with 1-5 representing "strongly disagree" to "strongly agree."

3.2. Data Collection

The research objects of this paper are tourists who have experienced immersive tourism and potential immersive tourists who know about immersive tourism. To improve the quality of the sample questionnaires, relevant introductions to immersive tourism are included in the distributed questionnaires. In order to facilitate the collection of questionnaire data, the questionnaires were made into QR codes and links for others to fill in through the questionnaire star platform and distributed online. After screening, 423 questionnaires were retained, with an effective rate of 87.5%. The sample size has reached 10 times of the number of items (23 items in total), enabling relevant research and analysis.

4. Interpretation of Result

4.1. Analysis of Basic Information of the Sample

Among the surveyed people, 53.9% were female, 63.12% were 18-45 years old, 7.09% were under 18 years old. The samples are mainly young and middle-aged, which is more in line with the current tourism group. Bachelor's degree or above accounted for 75.17% of the total, which was basically consistent with the age distribution. In terms of occupational composition, the distribution of occupational groups is relatively even, with enterprise personnel, students, civil servants of party and government organs and personnel of public institutions accounting for 87.7% of the total number, basically representing the main tourist groups. From the overall distribution of basic information, the sample is appropriately representative.

4.2. Statistical Analysis of the Mean Values of Each Variable

All variables involved in the model were analyzed using the mean value. The mean values of all variables range from 3.62 to 3.92, with the mean values exceeding the average value of 3. This indicates that the respondents have a high level of acceptance of immersive tourism.

4.3. Multiple Collinearity Test

In order to avoid the high correlation of variables, which will affect the accuracy and authenticity of model estimation, the multicollinearity test is conducted on each variable in advance. The test results show that the tolerance of each factor is greater than 0.1, and the variance inflation coefficient VIF is less than 5, which all meet the standard requirements, indicating that there is no serious multicollinearity problem. As shown in Table 1.

Table 1: Diagnostic table of collinearity of variables.

Item	VIF value	Tolerance
The attitude of immersive tourism	1.585	0.631
Subjective norms of immersive tourism	1.698	0.589
Perceived behavioral control in immersive tourism	1.804	0.554
The appeal of immersive tourism	1.783	0.561

4.4. Reliability Analysis

In order to ensure the internal consistency of each variable in the scale at the same latitude, the standard Cronbach's α coefficient should be used to analyze the reliability of the scale. The settlement result is that the overall reliability Cronbach's α coefficient of the scale in this study is 0.854. Cronbach's α coefficient of each variable is between 0.819 and 0.885. The scale has high internal

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consistency and high reliability, which can be used for subsequent analysis. As shown in Table 2.

4.5. Validity Analysis

Through validity analysis, the corresponding common degree values of the research items are all higher than 0.6, indicating that the information of the research items can be extracted effectively. The KMO value is 0.914, which is greater than 0.8, and the data is very suitable for information extraction. In addition, the variance explanation rate values of the five factors are 15.099%,14.813%,14.037%, 13.626% and 13.272% respectively, and the cumulative variance explanation rate after rotation is 70.846%>50%. It shows that the amount of information of research items can be extracted effectively. Confirmatory factor analysis was conducted to test the convergent validity and discriminant validity of the questionnaire. The test results show that the AVE values corresponding to the five factors are all greater than 0.5, and the CR values are all higher than 0.7, indicating that the data in this analysis have good convergent validity. The AVE square root value of each variable is greater than the maximum value of the absolute value of the correlation coefficient between variables, indicating good discriminant validity. The test results are shown in Table 2 and Table 3.

Table 2: Results of reliability and validity tests.

Factors	Initial items	Standardized loading	Cronbach's α	CR	AVE values
The attitude of immersive tourism	I think immersive tourism makes me experience a unique feeling.	0.810	0.852	0.852	0.591
	I think immersive travel brings me an extraordinary sense of experience.	0.761			
	I think it makes me feel good after experiencing immersive travel.	0.755			
	I think after experiencing immersive tourism, I feel very satisfied.	0.747			
Subjective norms of immersive tourism	My family and friends support me to participate in immersive tourism.	0.853	0.885	0.885	0.658
	My family and friends encouraged me to participate in immersive tourism.	0.801			
	If someone in my moments shared their feelings about participating in immersive tourism, I would be more willing to participate.	0.795			
	If most of my family, friends, colleagues and neighbors invite me to participate in immersive tourism, I am more willing to participate.	0.794			
Perceived behavioral control in immersive tourism	I have enough income to support my participation in immersive tourism.	0.787	0.871	0.872	0.630
	I have enough time to support my participation in immersive tourism	0.804			
	I have enough energy to support my participation in immersive tourism	0.830			
	I know how to participate in immersive tourism.	0.752			
The appeal of immersive tourism	The interactivity of immersive tourism will attract me to go.	0.713	0.819	0.819	0.532
	The rich scene of immersive tourism will attract me to go.	0.734			
	The advanced technology used in the immersive travel process will attract me to go.	0.711			
	The cultural theme of immersive tourism will attract me to go.	0.757			
The intention of immersive tourism	I will participate in immersive tourism in the future.	0.767	0.865	0.865	0.617
	I will invite my family and friends to participate in the immersive travel.	0.784			
	I would advise others to engage in immersive travel.	0.799			
	I would like to try to participate in immersive tourism.	0.791			

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Table 3: Discriminant validity table: Pearson correlation with AVE square root values

	The attitude of immersive tourism	Subjective norms of immersive tourism	Perceived behavioral control in immersive tourism	The appeal of immersive tourism	The intention of immersive tourism
The attitude of immersive tourism	0.769				
Subjective norms of immersive tourism	0.346	0.811			
Perceived behavioral control in immersive tourism	0.363	0.356	0.794		
The appeal of immersive tourism	0.490	0.326	0.355	0.729	
The intention of immersive tourism	0.523	0.473	0.431	0.474	0.785
Remarks: Diagonal blue numbers are AVE square root values					

4.6. Regression Analysis

This study adopts the hierarchical regression method to study the model changes brought about by the increase of the independent variable (X), that is, the increase of the independent variable of the attraction of immersive tourism. There are two models involved in this hierarchical regression analysis. The independent variables in Model 1 are the attitude towards immersive tourism, the subjective norm of immersive tourism, and the perceived behavioral control of immersive tourism. Model 2 adds the appeal of immersive tourism on the basis of Model 1, and the dependent variable of the model is the intention of immersive tourism.

The formula of Model 1 is: intention of immersive tourism =0.636 + 0.312* attitude of immersive tourism + 0.227* subjective norms of immersive tourism + 0.266* perceived behavioral control of immersive tourism.

The regression coefficient value of the attitude towards immersive tourism is 0.312, and it is significant (t=7.596, p=0.000<0.01). It shows that attitude will have a significant positive relationship with travel intention. The regression coefficient value of subjective norms of immersive tourism is 0.227, and it is significant (t=5.296, p=0.000<0.01), indicating that subjective norms will have a significantly positive impact on travel intention. The regression coefficient of perceived behavioral control of immersive tourism is 0.266, and it is significant (t=6.224, p=0.000<0.01), indicating that perceived behavioral control will have a significantly positive impact on travel intention.

After adding appeal to Model 1, the change of F value shows significance (p<0.05), which means that the addition of appeal has explanatory significance to the model. In addition, the R-square value rises from 0.469 to 0.550, which means that appeal can explain 8.1% of travel intentions. Specifically, the regression coefficient of appeal is 0.411, and it is significant (t=8.664, p=0.000<0.01), indicating that attractiveness has a significantly positive impact on travel intention.

The formula of Model 2 is: intention of immersive tourism =0.200 + 0.196* attitude of immersive tourism + 0.194* subjective norms of immersive tourism + 0.122* perceived behavioral control of immersive tourism +0.411* appeal of immersive tourism. According to the above analysis, H1, H2, H3, and H4 are all valid. The results are shown in Table 4.

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Table 4: Results of hierarchical regression analysis (n=423)

	Stratification 1					Stratification 2				
	B	standard error	*t*	*p*	*β*	*B*	standard error	*t*	*p*	*β*
Constant	0.636**	0.164	3.889	0.000	-	0.200	0.159	1.255	0.210	-
The attitude of immersive tourism	0.312**	0.041	7.596	0.000	0.321	0.196**	0.040	4.867	0.000	0.201
Subjective norms of immersive tourism	0.227**	0.043	5.296	0.000	0.244	0.194**	0.040	4.882	0.000	0.209
Perceived behavioral control in immersive tourism	0.266**	0.043	6.224	0.000	0.274	0.122**	0.043	2.860	0.004	0.126
The appeal of immersive tourism						0.411**	0.047	8.664	0.000	0.380
R^2	0.469					0.550				
Adjusted R^2	0.466					0.546				
F value	*F* (3,419) =123.515, *p*=0.000					*F* (4,418) =127.778,*p*=0.000				
$\triangle R^2$	0.469					0.081				
$\triangle F$ value	*F* (3,419) =123.515,*p*=0.000					*F* (1,418) =75.067,*p*=0.000				
Dependent variable: The intention of immersive tourism										
* $p<0.05$ ** $p<0.01$										

5. Conclusions and Enlightenment

5.1. Conclusions

This study is based on the background of creating new immersive tourism experiences by combining digital technology with traditional tourism places. Taking tourists who have experienced immersive tourism and potential immersive tourists who understand immersive tourism as the research objects, this paper focuses on the degree to which the theory of planned behavior explains immersive tourism intention and the impact of the appeal of immersive tourism on immersive tourism intention. Through regression analysis of the research data, the following conclusions are obtained:

First, the theory of planned behavior can explain consumers' immersive tourism intentions. Consumers' attitude, subjective norm and perceived behavioral control of immersive tourism have a significantly positive impact on immersive tourism intention, and the predictive power of the three on the intention of immersive tourism is 46.9%. Among them, the degree of influence of attitude, perceived behavioral control and subjective norm on intention decreases in turn.

Second, the appeal of immersive tourism has a significant positive impact on immersive tourism intention. In this study, the appeal of immersive tourism is introduced into the model of the theory of planned behavior as an independent variable, and it is found that the R-square value rises from 0.469 to 0.550, which means that the appeal can explain 8.1% of the travel intention. Moreover, after the inclusion, the appeal of immersive tourism in the model has the greatest impact on the intention of immersive tourism.

5.2. Enlightenment

Digital technology empowerment will become an important direction to promote the high-quality development of cultural and tourism industry at present and in the future. This study has important implications for how immersive tourism can better integrate technology and culture to attract consumers and drive economic growth.

Immersive tourism attraction is a place where digital technology is empowered, and cultural conservation is nurse. It should improve the intelligent level of tourism services, meet the personalized

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needs of tourists, and comprehensively improve the experience of consumers, which will affect the attitude of consumers.

The attitude, subjective norm and perceived behavioral control of immersive tourism will significantly and positively affect the intention of immersive tourism. Therefore, operators should enhance communication with consumers in various ways. For example, they should establish their own official accounts on social media platforms to introduce consumers to the new experience of immersive tourism compared with traditional tourism, and show the new development of tourism enabled by technology. Increase consumer access to information. Consumers are encouraged to post their true feelings and lay the foundation for the word-of-mouth effect.

The appeal of immersive tourism has a great impact on consumers' intention of immersive tourism. Therefore, in the design of immersive tourism scenes, attention should be paid to enhancing interactivity. In terms of technology integration, in order to reduce the sense of gap brought by excessive conspicuous skills to consumers, the use of digital technology in immersive tourism should integrate interesting scenes, increase their value, highlight content orientation, enhance the sense of immersion, and make tourists feel that they are part of the scene.

After the end of the activity, immersive tourism should pay attention to the continuation after the activity, and the intention should be strengthened and reciprocated in a closed loop.[6]Under the official account, conversations and discussions on topics related to immersive experience are regularly posted, and the depth and coverage of topics are expanded in combination with social hot spots, ultimately forming an immersive tourism with "culture as the core, identity as the orientation, and interaction as the soul". Thus, it extensively influences consumers' attitudes and subjective norms, and enhances the attractiveness of immersive tourism.

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