The Effect of Reference Groups and Ethnicity on Word-of-Mouth Communication in Health and Wellness Tourism in Ethnic Minority Communities

Abstract

The ethnic minority areas in China are relatively located away from coastal cities and economically developed regions. Therefore, it is often regarded as having relatively underdeveloped economic conditions. In the context of sustainable development, the development of the tourism industry is one of the feasible solutions for enterprises and government departments. And it need to apply new thinking, new methods and new materials and produce high-quality results for them. This article aims to sort out the current situation and correlations of tourists' perceived value, tourism satisfaction and word-of-mouth in health and wellness tourism scenic spots, and analyze the influence paths of word-of-mouth under the pressure of different reference groups and ethnic groups. This article obtains data through literature review and questionnaire survey. Among them, a total of 521 valid questionnaires were obtained from the questionnaire survey. Through independent sample t-tests and regression analysis, the influence paths of stress and ethnic on word-of-mouth among different reference groups were clarified. The research found that there were differences in perceived value, tourist satisfaction and words-of-mouth relationship between the respondents of the high and low reference groups. Moreover, the Han sample may predict its words-of-mouth more accurately through perceived value and tourist satisfaction. Finally, it is suggested that business operators can cooperate with universities or research institutions to clarify the characteristics of high-pressure tourists from different reference groups, to analyze their views on different value types of health and wellness tourism, and to formulate more precise marketing strategies.

Keywords: Ethnic minority areas, Health and Wellness Tourism, Marketing strategy, Perceived value, Ethnic minority

I. Introduction

 The ethnic minority areas in China are relatively located away from coastal cities and economically developed regions. Therefore, it is often regarded as having relatively underdeveloped economic conditions. Under the context of taking sustainable development into account, developing the tourism industry by applying new thinking, new methods and new materials and producing high-quality results is one of the feasible solutions (Yen, Guo, Zeng, Xu, Lu, and Yu, 2025). A multi-ethnic area, Guizhou Province in China, was taken as an example. The tourism development of this province focuses on the development of Health and Wellness Tourism (HWT). A number of AAA and AAAA scenic spots will be built and HWT was taken as the main axis.

However, the planning and construction of scenic spots are easy, but their subsequent operation and management are not. Quanhu Park at Guiyang City was one of the famous example. It is a 4A-level scenic area and has invested hundreds of millions of yuan in its construction. Even a subway station has been set up at the entrance of the park. The current situation is that there are few tourists and the facility resources are idle (Yen, Tian, Xiong, Zou, and Mei, 2025). Summarize the reasons, including issues such as the scenic area image, awareness to scenic spot and word-of-mouth (Yen, Sun, & Yang, 2022; Yen, He, Shi, Xie, and Ban, 2025), all these issues await countermeasures from business operators and the academic community.

Regarding the problems in the development of health and wellness tourism in these ethnic areas, research has pointed out that the service image and cultural image of health and wellness destinations play an important anroot of word-of-mouth (WOM) (Yen, He, Shi, Xie, and Ban, 2025), and positively influence tourists' willingness to revisit (Yen, Guo, Zeng, Xu, Lu, and Yu, 2025). The countermeasures for the image and WOM of scenic spots in ethnic minority areas regarding the purpose of health and wellness tourism seem to have taken shape at present. Secondly, the popularity of health and wellness tourism has also been confirmed, and it has a significant effect in enhancing tourists' word-of-mouth (Yen, Tian, Xiong, Zou, and Mei, 2025). This indicates that the operators of scenic spots in ethnic minority areas should attach importance to the issue of enhancing the popularity of the scenic spots when making marketing decisions. Furthermore, more recent studies have shown that due to the different ethnic groups of the respondents, their tourist behaviors may vary. Scenic spots should attempt to conduct marketing positioning based on the needs and characteristics of different ethnic groups (Yen, 2025). This study proposes for the first time to take ethnicity as the basis for marketing positioning, rather than merely relying on variables such as the image and popularity of traditional scenic spots.

Based on this, with reference to the previous research results, this paper attempts to put forward new insights from another perspective. For example, in the decision-making behavior of consumers, it is very easy to be influenced by significant others (reference groups) (Kim, Shin, and Kim, 2011; Alsajjan and Dennis, 2010; Lee and Chen, 2010). In other words, an individual's influence under the social normative environment, such as the perception and attitude of peers and family members towards certain specific behavioral manifestations and expectations of the actor, may affect the actor's will and behavior (Yen, 2018). Some studies refer to it as subjective norms (Yen, 2018), and some as social factors (Kim, Shin, and Kim, 2011). This article refers to it as social pressure. Based on this, this paper defines group pressure (reference group) as the behavioral influence of important reference groups around tourists on her/his participation in tourism decision-making. That is to say, reference group is one of the pressure and it refers to the degree to which tourists are influenced by their family members, friends, colleagues (classmates) when making travel decisions (Yen, 2018). Moreover, the greater the degree to which he is influenced by important others around her/him, the greater the pressure she/he is under.

Among these word-of-mouth antecedents, this paper refers to previous studies (Yen, Guo, Zeng, Xu, Lu, and Yu, 2025; Yen, Tian, Xiong, Zou, and Mei, 2025; Yen, He, Shi, Xie, and Ban, 2025), perceived value and tourist satisfaction were selected as the antecedents of word-of-mouth. To fill the gap in the existing literature, this paper adds two variables as the key to distinguishing tourists' behaviors, namely reference group and ethnicity.

In conclusion, the purpose of this study is to explore the correlations among the three research variables under different groups of reference groups and different ethnic classifications. Specifically, the research purpose of this paper is:

(1) To analyze the current situation and relationship of tourists' perceived value, tourists' satisfaction and word-of-mouth in health and wellness tourism in Guizhou Province;

(2) To clarify the paths of tourists' word-of-mouth that affect health and wellness tourism under different groups of reference groups and different ethnic classifications;

(3) To put forward suggestions as a reference for the government's health and wellness tourism construction and the marketing decisions of business operators.

2. Methodology

2.1 The Research Framework and Hypotheses

To achieve the research objective, the research framework of this paper is shown in Figure 1, which includes research aspects such as perceived value, tourism satisfaction, and word-of-mouth. In terms of research hypotheses, based on relevant studies such as perceived value, tourist satisfaction and word-of-mouth (Yen, 2018; Qiu et al., 2024; Yen, Guo, Zeng, Xu, Lu, and Yu, 2025; Yen, Tian, Xiong, Zou, and Mei, 2025; Yen, He, Shi, Xie, and Ban, 2025), it already proposed Hypothesis 1 (In the interaction between tourists and tourist attractions, the perceived value of tourists significantly and positively affects their WOM); Hypothesis 2 (In the interaction between tourists and tourist attractions, the perceived value of tourists significantly positively affects their behavioral tourism satisfaction); Hypothesis 3 (In the interaction between tourists and tourist attractions, tourists' satisfaction with their travels significantly and positively affects their reputation). According to previous studies (Yen, 2018; Yen, 2025), this paper proposes Hypothesis 4 (In the interaction between tourists and tourist attractions, the relationships among the three variables may vary depending on the reference groups of the tourists); and Hypothesis 5 (In the interaction between tourists and tourist attractions, the relationships among the three variables may vary depending on the ethnic groups of the tourists.)



Figure 1 Research framework

2.2 The Definition and Measurement of Variable

In terms of the definition of research dimensions, such as perceived value, tourism satisfaction and word-of-mouth are referred to relevant studies (Yen, 2018; Qiu et al., 2024; Yen, Guo, Zeng, Xu, Lu, and Yu, 2025; Yen, Tian, Xiong, Zou, and Mei, 2025; Yen, He, Shi, Xie, and Ban, 2025). Perceived value was defined as "the overall assessment of the relationship between the time, energy, physical strength, money spent by tourists after visiting a scenic area and the results obtained; and tourism satisfaction was defined as" the assessment of tourists visiting a scenic area regarding the environmental landscape and the expected and actual experience of the scenic area." Word-of-mouth was defined as "the positive evaluation of the scenic area by tourists visiting it and the assessment of their tendency to recommend others."

In terms of the development of measurement items, relevant literature was referred (Yen, 2018; Qiu et al., 2024; Yen, Guo, Zeng, Xu, Lu, and Yu, 2025; Yen, Tian, Xiong, Zou, and Mei, 2025; Yen, He, Shi, Xie, and Ban, 2025). The question items were proposed, including 4 questions on perceived value, 3 questions on tourist satisfaction, and 2 questions on word-of-mouth. The Likert 5-point scale is used for measurement. 5 indicates strong agreement and 1 indicates strong disagreement. The higher the score, the higher the degree of agreement. Furthermore, in terms of demographic variables, questions such as gender, age, education level, average monthly income and occupation were designed to understand the basic background of consumers. After the measurement tool was developed, this study sent the questionnaire to tourism experts and industry practitioners to confirm the way the questions were described, the difficulty of tourists filling them out, and to seek their suggestions for correction. Secondly, this study also invited local scholars to correct the words used, confirm the expression of the meaning, and make appropriate corrections. Through the above steps, the scale of this study was completed.

2.3 Questionnaire Survey

The main purpose of this article is to analyze the correlations among variables, and it is suitable to use the questionnaire survey method. This study solicited voluntary participating tourists to fill out questionnaires in relevant scenic spots, mainly including tourist attractions in Baiyun District, Guiyang City and Liupanshui City, Guizhou Province. This study selected tourists to participate in the questionnaire activity through sampling. In terms of sample size, it is generally recommended that the number of samples in the initial test should be larger than the number of questions, preferably 3 to 5 times the number of questions. 80 questionnaires should be distributed in the initial test, and 80 valid questionnaires should be distributed. When conducting the formal investigation, considering the number of questions in this study (a total of 14 questions) and the subsequent analysis, a total of 530 samples were investigated in this study. In terms of the sampling method, considering the feasibility of the study and the subsequent analysis, the quota sampling method was adopted in this study. Based on field observations and the characteristics of relevant research samples, sampling was conducted with gender and age as the quota criteria to obtain the samples required for the analysis.

In terms of the investigation methods, this study conducted a questionnaire survey through face-to-face interviews with interviewers and on-the-spot distribution of responses. To ensure the quality of the survey, researchers conduct interviewer training before the formal survey, enabling the interviewers to be familiar with the purpose, content and methods of the questionnaire survey, and proficient in dealing with various problems, so as to ensure that the questionnaire survey can be carried out safely and smoothly and obtain high-quality data. In addition to organizing a photo-taking record group, the researchers also went to the scene in person to participate, take photos for evidence, and ensure that the questionnaires were filled out by tourists. The initial test was held in November 2024, and the formal investigation period was from December 2024 to January 2025. A total of 530 questionnaires were distributed, 332 were retrieved, and 521 were valid questionnaires, with a valid questionnaire rate of approximately 98%.

In terms of sample characteristics, 36.3% were male and 63.7% were female. In terms of age, the proportion of respondents aged 18-20 was 24.7%(129 times), those aged 21-30 was 25.7%(134 times), those aged 31-40 was 17.3%(90 times), those aged 41-50 was 11.7%(61 times), and those aged 51-60 was 10%(52 times). Those over 60 years old accounted for 3.1%(16 times); In terms of educational attainment, the proportion was 19.4%(101 times) for junior high school, primary school and below, 13.8%(72 times) for senior high school, 17.5(91 times) for junior college, and 49.3(257 times) for bachelor's degree and above. In terms of occupational distribution, military, police, public service and education accounted for 2.5%(11 times), manufacturing accounted for 4.4%(23 times), business and service accounted for 8.6(45 times), agriculture 9.2%(48 times), and students accounted for 40.9%(213 times). Monthly income (in RMB) of less than 3,000 yuan accounted for 55.1%(292 times), 3,001-6,000 yuan accounted for 29%(151 times), 6,001-8,000 yuan accounted for 11%(57 times), and over 8,001 yuan accounted for 4.1%(21 times).

3. Empirical Results

3.1The Descriptive Statistics

In terms of descriptive statistics (as shown in Table 1), the average value ranges from 3.86 to 4.10, which is within the range of general to agreement, and the standard deviation ranges from 0.950 to 1.052. Furthermore, the kurtosis coefficient is less than 3 and the skewness coefficient is less than 10, indicating that the data used in this study did not violate the normal distribution (Tabachnick, Fidell and Ullman, 2007), and subsequent analysis can be conducted.

3.2 The Validity and Reliability

In terms of validity analysis, the reference literature of the scale in this study was drafted and has a theoretical basis. It has also been reviewed by experts and researchers and has expert validity. Secondly, in this study, the maximum variation method was adopted. Through principal component analysis, covering the factor analysis process, the Sphericity test was used to determine whether it was suitable for factor analysis. Check whether the Communalities among the questions are greater than 0.5 to examine the degree of intersection of the questions; The maximum variation method is used to rotate the axis to extract the factors with eigenvalues greater than 1. Also, processes such as the factor load after the rotation of the axis being all greater than 0.7 were used to test the construct validity of the research variable items (Guadagnoli and Velicer, 1988).

The analysis results show that the Bartletts' Sphericity test of the four variables is significant, that is, it is suitable for factor analysis. In terms of the validity of perceived value, travel satisfaction and word-of-mouth, one factor was extracted from each scale and named in sequence as perceived value, travel satisfaction and behavioral intention. After rotating the axis, the factor loads of all items were greater than 0.7. The variance extractions were perceived value 66.01%, tourism satisfaction 71.78%, and word-of-mouth 79.07% respectively, indicating that the perceived value, tourism satisfaction, and word-of-mouth scales used in this study have good constructive validity. Finally, the reliability coefficients of perceived value, tourist satisfaction and word-of-mouth were 0.828, 0.803 and 0.737 respectively, all greater than 0.7, belonging to the high reliability range (Hair et al., 2010), and the scale had good internal consistency (as shown in Table 2).

Table 1 The Descriptive Statistics (n=521)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Items | M | SD | SK | KU |
| **Perceived value**  |  |  |  |  |
| PV1:Compared to the money I spent, it was well worth the health and wellness trip to the XX. | 3.96 | 1.023 | -.936 | .436 |
| PV2: Compared to the time I spent, it was well worth the health and wellness trip to XX. | 3.93 | .998 | -.781 | .226 |
| PV3lCompared to the emotional energy I invested, a health and wellness trip to XX is well worth it. | 4.00 | 1.015 | -1.007 | .623 |
| PV4:Compared to the physical effort I put in, a health and wellness trip to the XX is well worth it. | 3.96 | .959 | -.826 | .447 |
| **Tourist satisfaction** |  |  |  |  |
| SA1:The health and wellness tourism in XX is worth my time and effort. | 4.01 | .950 | -.879 | .479 |
| SA2:The environment for health and wellness tourism in XX is better than that in other places. | 3.86 | 1.014 | -.649 | -.197 |
| SA3: I'm satisfied with the landscape of the XX Health and Wellness Tourist Scenic Area. | 4.00 | .979 | -.972 | .650 |
| **Words of Mouth** |  |  |  |  |
| MO1: I will tell others about the advantages. | 4.10 | .977 | -1.144 | 1.120 |
| MO2:I would encourage others to visit. | 4.07 | .990 | -.978 | .609 |
| **Reference Group** |  |  |  |  |
| SN1: My family can easily influence my travel decisions. | 3.94 | 1.052 | -.784 | .003 |
| SN2: My friends can easily influence my travel decisions. | 3.93 | 1.006 | -.646 | -.232 |
| SN3: My colleagues (classmates) can easily influence my travel decisions. | 3.90 | .998 | -.665 | -.102 |

Table 2 The Validity and Reliability

|  |  |  |
| --- | --- | --- |
| Items | FL | Cronbach’s Alpha |
| **Perceived value (eigenvalue = 2.64;Cumulative %= 66.01%)** |  | **0.828** |
| PV1:Compared to the money I spent, it was well worth the health and wellness trip to the XX. | .770 |  |
| PV2: Compared to the time I spent, it was well worth the health and wellness trip to XX. | .830 |  |
| PV3lCompared to the emotional energy I invested, a health and wellness trip to XX is well worth it. | .815 |  |
| PV4:Compared to the physical effort I put in, a health and wellness trip to the XX is well worth it. | .835 |  |
| **Tourist satisfaction (eigenvalue = 2.15;Cumulative %=71.78%)** |  | **0.803** |
| SA1:The health and wellness tourism in XX is worth my time and effort. | .842 |  |
| SA2:The environment for health and wellness tourism in XX is better than that in other places. | .847 |  |
| SA3: I'm satisfied with the landscape of the XX Health and Wellness Tourist Scenic Area. | .853 |  |
| **Words of Mouth (eigenvalue = 1.58; Cumulative %= 79.07%)** |  | **0.737** |
| MO1: I will tell others about the advantages. | .889 |  |
| MO2:I would encourage others to visit. | .889 |  |
| **Reference Group(eigenvalue = 2.23; Cumulative %= 74.37%)** |  | **0.827** |
| SN1: My family can easily influence my travel decisions. | .862 |  |
| SN2: My friends can easily influence my travel decisions. | .863 |  |
| SN3: My colleagues (classmates) can easily influence my travel decisions. | .862 |  |

3.3 Test of the Difference for Reference Groups and Ethnic Groups on Variables

3.3.1 The Levene's Test for Equal Variance

The results of the Levene's test of variance are shown in Table 7 (Appendix). Firstly, in the isomorphic test of the variance of the reference population, in this study, the reference population was divided into two groups, the low group (n=214) and the high group (n=307), based on the mean. The test results show that the F-values of perceived value and word-of-mouth both reach significant levels, indicating that there are significant differences in the populations of the two types of respondents (those with high reference group stress and those with low reference group stress). However, the F-score of travel satisfaction did not reach a significant level, indicating that there was no significant difference in the populations of the two groups of respondents (those with high reference group stress and those with low reference group stress). Overall, among the variables adopted in this paper, the results of the homogeneity test of the variance of the two groups of samples show that the populations of two out of the three variables have heterogeneous phenomena. This means that the population characteristics of the two groups of samples are quite different, and the relationships between the variables may be different. Based on this, the independent sample t-test was able to continue in this study.

Secondly, in this study, ethnic groups were classified into two categories, namely ethnic minorities (n=174) and the Han people (n=347), using the same steps. The test results show that the F-values of perceived value and word-of-mouth do not reach significant levels, indicating that there is no significant difference in the populations of the two types of respondents (ethnic minorities and Han people). Based on this, the independent sample t-test was able to continue in this study.

3.3.2 The Independent Sample t-test

The results of the independent sample t-test are shown in Table 8(Appendix). In terms of the reference group, regardless of whether the population was homogeneous or not, the t-values reached a significant level, indicating that respondents classified by different ethnic groups had significant differences in their perceptions of perceived value, tourist satisfaction, and word-of-mouth. Secondly, if the differences between the two groups of samples are examined with a confidence interval of 95% difference, the analysis results show that the upper and lower limits of the confidence intervals of the three variables do not include 0. This means that there are significant differences in the views of the two groups of samples on the three variables. Furthermore, after examining the average differences between the two groups of samples in three variables, the study found that the perceived value, tourist satisfaction, and word-of-mouth of respondents with low group stress were statistically significantly lower than those of respondents with low group stress. Based on this, this study was able to separate the two groups of samples and proceed with the subsequent predictions of tourist satisfaction and word-of-mouth.

In terms of ethnicity, the analysis results show that respondents classified by different ethnic groups have significant differences in their perception of word-of-mouth. Secondly, if the differences between the two groups of samples are examined with a confidence interval of 95% difference, the analysis results show that the upper and lower limits of the confidence interval of the word-of-mouth variable do not include 0. This means that there are significant differences in the views of the word-of-mouth variable between the two groups of samples. Furthermore, after examining the average differences between the two groups of samples in three variables, the study found that the perceived word-of-mouth of minority respondents was statistically significantly lower than that of Han respondents. Based on this, this study was able to separate the two groups of samples and proceed with the subsequent predictions of tourist satisfaction and word-of-mouth.

3.4 The Predictions of Word-of-Mouth Models for Different Reference Groups

Based on the above analysis results, this study utilized the sample segmentation technique to analyze the two groups of samples separately, and the predicted results of tourists' satisfaction are shown in Table 3. For respondents with low group stress, the model fit reached a significant level (F=267, p=0.000), the VIF was equal to 1(the theoretical suggested value of VIF <10), and the collinearity problem was not serious. The analysis results show that the perceived value significantly affects tourists' satisfaction, with a predictive power of 55.8%. For respondents with high group stress, the model fit reached a significant level (F=212, p=0.000), the VIF was equal to 1(the theoretical suggested value of VIF <10), and the collinearity problem was not serious. The analysis results show that the perceived value significantly affects tourists' satisfaction, with a predictive power of 41.1%.

For both groups of samples, perceived value significantly affects tourist satisfaction and is an important predictive antecedent for tourist satisfaction. Moreover, in terms of the prediction of travel satisfaction, the predictive power of respondents in the low group stress group was 14.7% higher than that of respondents in the high group stress group. This shows that those with lower group pressure may be more likely to predict their travel satisfaction through perceived value.

Table 3 The Predictions of Tourist Satisfaction in Different Reference Groups

|  |  |
| --- | --- |
| Independent variable | Dependent variable: SAT |
| Low Pressure(n=214) | High Pressure (n=307) |
| Beta | t | Beta | t |
| PV | 0.747\*\*\* | 16.363 | 0.641\*\*\* | 14.577 |
| F | 267 | 212 |
| VIF | 1 | 1 |
| R2 | 0.558 | 0.411 |

\*p<0.05, \*\*p<0.01, \*\*\*p<0.001; PV: Perceived Value SAT: Tourists Satisfaction;

Regarding the prediction of word-of-mouth, the results are shown in Table 4. For respondents with low group stress, the model fit reached a significant level (F=68, p=0.000), the VIF ranged from 0.44 to 2.66 (the theoretical suggested value of VIF <10), and the collinearity problem was not serious. The analysis results show that both perceived value and tourist satisfaction significantly affect word-of-mouth, with a predictive power of 39.2%. For respondents with high group stress, the model fit reached a significant level (F=65, p=0.000), the VIF ranged from 0.59 to 1.70 (the theoretical suggested value of VIF <10), and the collinearity problem was not serious. The analysis results show that both perceived value and tourist satisfaction significantly affect word-of-mouth, with a predictive power of 30%.

For the two groups of samples, both perceived value and tourist satisfaction significantly affect word-of-mouth and are important predictive antecedents of word-of-mouth. Moreover, in terms of the prediction of word-of-mouth, the predictive power of respondents in the low group stress group was 9.2% higher than that of respondents in the high group stress group. This shows that those with lower group pressure may be more likely to predict their word-of-mouth through perceived value and travel satisfaction.

Table 4 The Predictions of Words of Mouth in Different Reference Groups

|  |  |
| --- | --- |
| Independent variable | Dependent variable: WOM |
| Low Pressure 3(n=214) | High Pressure (n=307) |
| Beta | t | Beta | t |
| PV | 0.382\*\*\* | 4.729 | 0.330\*\*\* | 5.277 |
| SAT | 0.287\*\*\* | 3.559 | 0.275\*\*\* | 4.398 |
| F | 68 | 65 |
| VIF | 0.44-2.66 | 0.59-1.70 |
| R2 | 0.392 | 0.300 |

\*p<0.05, \*\*p<0.01, \*\*\*p<0.001; PV: Perceived Value SAT: Tourists Satisfaction; WOM: Words of Mouth

3.5 The Prediction of Word-of-Mouth Models for Different Ethnic Groups

Based on the above analysis results, this study utilized the sample segmentation technique to analyze the two groups of samples separately, and the predicted results of tourists' satisfaction are shown in Table 5. For the minority respondents, the model fit reached a significant level (F=229, p=0.000), the VIF was equal to 1(the theoretical suggested value of VIF <10), and the collinearity problem was not serious. The analysis results show that the perceived value significantly affects tourists' satisfaction, with a predictive power of 57.2%. For the Han respondents, the model fit reached a significant level (F=446, p=0.000), the VIF was equal to 1(the theoretical suggested value of VIF <10), and the collinearity problem was not serious. The analysis results show that the perceived value significantly affects tourists' satisfaction, with a predictive power of 56.4%.

For both groups of samples, perceived value significantly affects tourist satisfaction and is an important predictive antecedent for tourist satisfaction. Moreover, in terms of the prediction of travel satisfaction, the predictive power of respondents from ethnic minorities and the Han nationality is almost the same. This shows that both ethnic groups may predict their travel satisfaction through perceived values.

Table 5 The Predictions of Tourist Satisfaction in Different Ethnic Groups

|  |  |
| --- | --- |
| Independent variable | Dependent variable: SAT |
| Ethnic minority(n=174) | Han minority(n=347) |
| Beta | t | Beta | t |
| PV | 0.756\*\*\* | 15.160 | 0.751\*\*\* | 21.138 |
| F | 229 | 446 |
| VIF | 1 | 1 |
| R2 | 0.572 | 0.564 |

\*p<0.05, \*\*p<0.01, \*\*\*p<0.001; PV: Perceived Value SAT: Tourists Satisfaction;

Then, in terms of the prediction of word-of-mouth, the results are shown in Table 6. For the minority respondents, the model fit reached a significant level (F=34, p=0.000), the VIF ranged from 0.43 to 2.33 (the theoretical suggested value of VIF <10), and the collinearity problem was not serious. The analysis results show that both perceived value and tourist satisfaction significantly affect word-of-mouth, with a predictive power of 28.6%. For the Han respondents, the model fit reached a significant level (F=188, p=0.000), the VIF ranged from 0.43 to 2.29 (the theoretical suggested value of VIF <10), and the collinearity problem was not serious. The analysis results show that both perceived value and tourist satisfaction significantly affect word-of-mouth, with a predictive power of 52.3%.

For the two groups of samples, both perceived value and tourist satisfaction significantly affect word-of-mouth and are important predictive antecedents of word-of-mouth. Moreover, in terms of the prediction of word-of-mouth, the predictive power of Han respondents was 23.7% higher than that of minority respondents. This indicates that the Han people may be more likely to predict their word-of-mouth through perceived value and travel satisfaction. Alternatively, ethnic minorities may have other factors influencing word-of-mouth beyond perceived value and tourism satisfaction.

Table 6 The Predictions of Words of Mouth in Different Ethnic Groups

|  |  |
| --- | --- |
| Independent variable | Dependent variable: WOM |
| Ethnic minority(n=174) | Han minority(n=347) |
| Beta | t | Beta | t |
| PV | 0.334\*\* | 3.384 | 0.423\*\*\* | 7.502 |
| SAT | 0.235\* | 2.377 | 0.349\*\*\* | 6.187 |
| F | 34 | 188 |
| VIF | 0.43-2.33 | 0.43-2.29 |
| R2 | 0.286 | 0.523 |

\*p<0.05, \*\*p<0.01, \*\*\*p<0.001; PV: Perceived Value SAT: Tourists Satisfaction; WOM: Words of Mouth

3.6 Discussion

The word-of-mouth prediction paths under different reference groups are shown in Figure 2. Overall, the perceived value of tourists significantly affects word-of-mouth (Hypothesis 1), the perceived value of tourists significantly affects tourism satisfaction (Hypothesis 2), tourism satisfaction of tourists significantly affects word-of-mouth (Hypothesis 3), and the different relationships of research variables under different reference groups (high and low group pressures) (Hypothesis 4) have all been confirmed. The analysis results are consistent with the existing studies (Yen, 2018; Qiu et al., 2024; Yen, Guo, Zeng, Xu, Lu, and Yu, 2025; Yen, Tian, Xiong, Zou, and Mei, 2025; Yen, He, Shi, Xie, and Ban, 2025).

First of all, when tourists perceive that the higher the money, time, spirit and physical strength they have invested, the greater the return they will receive. In this way, they will have a higher-than-average value perception of health and wellness tourist attractions. In this situation, the more likely they are to tell others about the advantages of health and wellness tourist attractions and recommend them to others. Secondly, the perceived value of tourists significantly affects tourism satisfaction. This means that after tourists feel that their efforts have received a return higher than the average, they are more likely to achieve satisfaction higher than expected. In addition, tourists' satisfaction with their travels significantly affects word-of-mouth. This indicates that when tourists' actual experience of participating in health and wellness tourism exceeds expectations, they are more likely to give positive evaluations to scenic spots and return their applications to others. Finally, the results of different group stress analyses show that the prediction of word-of-mouth only reaches 39% and 30% respectively. Those with lower group stress may be more likely to predict their word-of-mouth through perceived value and travel satisfaction. This indicates that in addition to perceived value and travel satisfaction, there may be other more important factors in the word-of-mouth prediction of young respondents (those under the age of 30). Based on this, identifying the group pressure of tourists may be one of the tools for the marketing positioning of scenic spots.



\*p<0.05, \*\*p<0.01, \*\*\*p<0.001

Figure 2. The influence paths for different reference groups

The word-of-mouth prediction paths under different ethnic groups are shown in Figure 3. Overall, the perceived value of tourists significantly affects word-of-mouth (Hypothesis 1), the perceived value of tourists significantly affects tourism satisfaction (Hypothesis 2), tourism satisfaction of tourists significantly affects word-of-mouth (Hypothesis 3), and the different relationships of research variables under different ethnic groups (ethnic minorities and Han people) (Hypothesis 5) have all been confirmed. The analysis results are consistent with the existing studies (Yen, 2018; Qiu et al., 2024; Yen, Guo, Zeng, Xu, Lu, and Yu, 2025; Yen, Tian, Xiong, Zou, and Mei, 2025; Yen, He, Shi, Xie, and Ban, 2025).

Firstly, according to Figure 2, it can be found that the minority samples are significantly smaller than the Han samples in the path prediction of perceived value - word-of-mouth and tourism satisfaction - word-of-mouth. This indicates that in the process of obtaining tourists' word-of-mouth, health and wellness tourism attractions may need to consider the ethnic attributes of the tourists. As shown in previous studies (Yen,2025), ethnic minority tourists attach more importance to cultural landscapes than Han tourists. After tourists perceive the image of cultural landscapes, they are more likely to give positive evaluations and recommendations to scenic spots. Furthermore, since the scenic area is located in an ethnic minority region, it should first consider the issue of meeting the tourism needs of local ethnic minorities. In other words, when taking ethnic groups as market segmentation variables, scenic spots should consider the perceived value of ethnic minorities in order to obtain their positive evaluations and recommendations of the scenic spots. Finally, the analysis results of the family samples are consistent with the existing studies (Yen, 2018; Qiu et al., 2024; Yen, Guo, Zeng, Xu, Lu, and Yu, 2025; Yen, Tian, Xiong, Zou, and Mei, 2025; Yen, He, Shi, Xie, and Ban, 2025). This indicates that the strategies for scenic spots in ethnic minority areas to acquire and enhance the reputation of Han tourists may not be significantly different from those in general areas (non-ethnic areas). That is to say, the word-of-mouth building strategies that can be adopted in scenic spots in other regions may also be applicable in ethnic minority areas.



\*p<0.05, \*\*p<0.01, \*\*\*p<0.001

Figure 3. The influence paths for different Ethnic groups

4. Conclusions and Suggestions

Due to the limited geographical location and economic development in ethnic minority areas, the economic conditions need to be improved. Developing the health and wellness tourism industry is a feasible path. This article aims to sort out the current situation and correlations of tourists' perceived value, tourism satisfaction and word-of-mouth in health and wellness tourism scenic spots, and analyze the influence paths of word-of-mouth under the pressure of different reference groups and ethnic groups. Based on the above analysis, this paper reaches the following conclusions:

* The respondents' perceived value, travel satisfaction and word-of-mouth of health and wellness tourist attractions have a relatively high average degree of agreement, and the differences in their views are relatively small.
* There are differences in perceived value, travel satisfaction and word-of-mouth relationship between the respondents of the high and low reference groups under pressure. Among them, those with lower group pressure may be more likely to predict their travel satisfaction through perceived value, and may predict their word-of-mouth more accurately through perceived value and travel satisfaction.
* Both ethnic minority respondents and Han respondents were able to predict their tourist satisfaction through perceived value. Han respondents might be more accurate in predicting their word-of-mouth through perceived value and travel satisfaction. For ethnic minorities, there may be other perceived values and tourism satisfaction, but more important factors influencing word-of-mouth.

Based on the above conclusions, this paper suggests the following:

* Perceived value significantly influences word-of-mouth and tourism satisfaction. Health and wellness tourism attractions should strive to enhance tourists' perceived value. Specifically, businesses can collaborate with universities or research institutions to clarify the characteristics of high-pressure tourists from high and low reference groups, analyze their views on different value types of health and wellness tourism, and formulate more precise marketing strategies. For example, formulate differentiated marketing strategies for tourists who prefer different attributes such as functional value, affective value, social value, and hedonic value. In this way, there will be a higher chance of obtaining their satisfaction with the trip and a good WOM.
* Tourism satisfaction significantly affects word-of-mouth. Health and wellness tourist attractions should strive to enhance tourists' travel satisfaction. For health and wellness tourism attractions, identifying tourists with higher autonomy (those with lower group pressure) may be the primary task of targeted marketing. Based on this, it is suggested that business operators conduct tourist satisfaction surveys and target customer group analyses at the same time. Target customer group analysis mainly focuses on the characteristics of different target customer groups and their reference groups. In this way, the scenic area can understand the interpersonal network relationships of which specific target customer group and then formulate marketing strategies accordingly.
* Ethnicity is also an indicator of market segmentation. Health and wellness tourism scenic spots should strive to clarify the health and wellness tourism needs of different ethnic groups. Among them, Han tourists can predict their word-of-mouth more accurately through perceived value and travel satisfaction. This indicates that when scenic spots accept orders, if they can clarify the ethnic attributes of tourists in advance and confirm their motives (value categories) for health and wellness tourism, it will be conducive to achieving higher tourism satisfaction and predicting their reputation.

For future research, this paper suggests the following:

* This paper has confirmed that the reference group and ethnicity may be important variables for market segmentation in health and wellness tourism attractions. Future research can continue to attempt other market segmentation variables.
* The predictive power of word-of-mouth among ethnic minorities is relatively low. There may be other factors influencing word-of-mouth other than perceived value and tourism satisfaction. Based on this, future research can continue to attempt other antecedents of word-of-mouth influence, such as functional value, affective value, social value, hedonic value, etc.
* The investigation sites of this article include Guiyang City and Liupanshui City, covering the health and wellness scenic spots in the two places with different levels of economic development. Future research can continue to attempt to expand the survey area and improve the external validity of the research.

Disclaimer (Artificial intelligence)

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Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

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Details of the AI usage are given below:

1.

2.

3.

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Appendix

Table 7 Independent Sample t-test Verification to Reference Group

|  |  |  |
| --- | --- | --- |
| Variable | Levene's test for equal variance | The t-test for whether the average values are equal |
| F | Sig. | T | df | Sig. (double tail) | Average difference  | Standard error | 95% CI |
| Lower | Upper |
| PV | Equal variance is adopted | 4.882 | .028 | -11.471 | 519 | .000 | -2.96376 | .25837 | -3.47133 | -2.45618 |
| Equal variance is not adopted |  |  | -10.977 | 383.156 | .000 | -2.96376 | .27000 | -3.49462 | -2.43290 |
| SAT | Equal variance is adopted | 2.683 | .102 | -10.333 | 519 | .000 | -2.09130 | .20238 | -2.48889 | -1.69370 |
| Equal variance is not adopted |  |  | -9.996 | 401.749 | .000 | -2.09130 | .20921 | -2.50259 | -1.68001 |
| WOM | Equal variance is adopted | 21.681 | .000 | -10.622 | 519 | .000 | -1.50139 | .14135 | -1.77907 | -1.22370 |
| Equal variance is not adopted |  |  | -9.927 | 344.400 | .000 | -1.50139 | .15125 | -1.79888 | -1.20389 |

\*p<0.05, \*\*p<0.01

Table 8 Independent Sample t-test Verification to Ethnic Group

|  |  |  |
| --- | --- | --- |
| Variable | Levene's test for equal variance | The t-test for whether the average values are equal |
| F | Sig. | T | df | Sig. (double tail) | Average difference  | Standard error | 95% CI |
| Lower | Upper |
| PV | Equal variance is adopted | 1.079 | .299 | .975 | 519 | .330 | .29383 | .30147 | -.29842 | 1.079 |
| Equal variance is not adopted |  |  | 1.022 | 394.011 | .307 | .29383 | .28738 | -.27115 |  |
| SAT | Equal variance is adopted | .341 | .560 | -.098 | 519 | .922 | -.02266 | .23181 | -.47806 | .341 |
| Equal variance is not adopted |  |  | -.101 | 378.288 | .920 | -.02266 | .22435 | -.46380 |  |
| WOM | Equal variance is adopted | 2.323 | .128 | 2.848 | 519 | .005 | .45974 | .16143 | .14261 | 2.323 |
| Equal variance is not adopted |  |  | -9.927 | 344.400 | .000 | -1.50139 | .15125 | -1.79888 | -1.20389 |

 \*p<0.05, \*\*p<0.01