Research on Product Innovation of Tourism Enterprises under the Background of Aging
——Based on Experimental Analysis

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ABSTRACT
How to adapt to the development status of an aging population, develop innovative tourism products and improve the tourism experience of elderly tourists have become an important issue for tourism enterprises to be solved. Based on this, this paper constructs a structural equation model to explore the impact of tourist-to-tourist interactions on subjective well-being. Using SPSS and AMOS software to analyze the data of 416 elderly tourists in Chengdu, China, it is found that the interaction between elderly tourists directly or indirectly affects subjective well-being. Well-being and the value of tourism experience have a partial mediating effect on it. The tourism companies can innovate tourism service products in terms of improving employee service skills, creating a good tourism atmosphere, and guiding the interactive behavior of elderly tourists.

Keywords—senior group tourists; interaction between tourists; experience value; subjective well-being

1. INTRODUCTION
The world is gradually entering the stage of development of an aging society and will have a profound impact on the world economy. Studies have shown that by 2043, the global elderly population will reach 1.89 billion, accounting for 20.3% of the total population\textsuperscript{[1]}. Under the background of the aging society, how to improve the management level of tourism enterprises and provide better tourism products and high-quality service experience for the elderly tourists have become an important issue in theoretical research and industrial practice. Based on this, the subjective well-being of elderly tourists in group tourism is explored based on the theoretical perspective of tourist interaction with Chinese elderly tourists as the object, and then provides a reference for the product development and management of tourism enterprises.

2. THEORY AND ASSUMPTIONS
2.1 Interactions and subjective well-being
The subjective well-being can judge the quality of an individual’s quality of life\textsuperscript{[2]}, which combines emotion and life satisfaction\textsuperscript{[3]}. According to psychological research, when people lack communication with others, they will feel less happy\textsuperscript{[4]}. This article defines the interactions between tourists as various forms of verbal or nonverbal communication and behavioral interactions between tourists actively or passively with other tourists\textsuperscript{[5]}.

H1: The tourist-to-tourist interactions have a
significant impact on tourists' subjective well-being.

2.2 Interactions and experience value

The essence of the tourism experience is the needs of tourists. This article selects a hierarchical experience value theory[8], which includes three dimensions: functional experience value is the basic value form that consumers obtain in the experiential process. The emotional experience value reflects the changes in customer emotions and feelings and the experience results of subjective feelings. The social experience value pays attention to the meaning of the relationship between customers and society to a certain extent[7]. In tourism activities, tourists create more experience value for tourists by enjoying the fun of communicating with others and sharing happiness[9-10]. When there is obvious interference and conflict in the customer group, it will often bring extremely negative experiences to other customers and affect the value of customer experience[11]. The friendly communication and interactions help to reduce the sense of helplessness and insecurity of tourists in an unfamiliar environment, and improve the cognitive experience of tourists[12]. Based on this, this article proposes hypotheses:

H2: The violation of etiquette has a significant impact on the experience value of tourists.

H3: The interference and disputes have a significant impact on the experience value of tourists.

H4: The friendly conversation has a significant impact on the experience value of tourists.

H5: The suggestions and assistance have a significant impact on the experience value of tourists.

2.3 Experience value and subjective well-being

Huang Xiang believes that the tourism experience is subjective well-being and a subjective psychological experience in a tourism situation[13]. The tourism experience is an important factor that affects the subjective well-being of tourists. When the experience level of tourists is higher than their psychological expectations, tourists will subjectively believe that tourism activities are valuable and improve their own well-being. Based on this, this article proposes the following hypotheses:

H6: The functional experience value has a significant positive impact on subjective well-being.

H7: The emotional experience value has a significant positive impact on subjective well-being.

H8: The social experience value has a significant positive impact on subjective well-being.

Based on the above analysis, a research hypothesis model is constructed (Figure 1).

3. Research Design

3.1 Questionnaire design and variable measurement

Refer to Nicholls[14], Jiang Ting[7,11,15] and other related research for the interactive behavior scale among elderly tourists, and refer to Xie Yanjun[16], Jiang Ting[7,11] and other researches for the experience value dimension items, subjective well-being refers to Jiang Prize[17], Zhang Yan[18] and other researches. For the basic information, please refer to research by Yao Zhaobin[19].

3.2 Formal research

The survey site was Dujiangyan Scenic Area,
Chengdu. A total of 492 questionnaires was collected. Invalid questionnaires were excluded, and 416 valid questionnaires were obtained. The effective rate of questionnaires was 84.6%. The surveyed elderly tourists have a similar proportion of men and women. More than 80% of them are 60-75 years old. The overall education level is not high, and nearly half are junior high school and below. The monthly income is generally not low, and more than half are more than 3, 500 yuan 47.4%; in addition, the vast majority of the interviewees believed that they were in good health, and two-thirds of them participated in a group tour. On the whole, the distribution of survey samples is reasonable and can meet research needs.

4. EMPIRICAL ANALYSIS

4.1 Reliability and validity test

The overall α value of the scale is 0.836, and the α values of the latent variables and the observed variables are all greater than 0.7, indicating that the reliability of the questionnaire is acceptable. Carrying out confirmatory factor analysis, the standardized factor loads of all measurement items are higher than 0.5, the AVE values of 9 latent variables are all greater than 0.5, and the CR values are all greater than 0.7, indicating that the measurement items have good convergence validity.

4.2 Structural equation model analysis

The AMOS 23.0 software was used for structural equation model analysis, and demographic variables were used as control variables. Data analysis showed: $\chi^2 = 1480.027$, DF=594, $p<0.01$, $\chi^2$/DF = 2.492 less than 3, IFI=0.936, CFI= 0.935, TLI=0.923, both greater than 0.9, PGFI = 0.681, PNFI = 0.758, both greater than 0.5, indicating that the model fit is ideal; RMSEA=0.060, less than 0.08, considering the large number of index variables, the fit is acceptable. The path test results of the model showed that 15 of the 23 hypotheses were supported (Table 1).

| Hypothetical Path relationship | P-value | Standardized path coefficient | Support |
|-------------------------------|---------|-------------------------------|---------|
| H1a Subjective well-being ← Etiquette violation | 0.541 | -0.127 | No |
| H1b Subjective well-being ← Struggle for execution | 0.117 | 0.073 | No |
| H1c Subjective well-being ← Friendly conversation | 0.235 | 0.044 | No |
| H1d Functional experience value ← Etiquette violation | 0.037 | -0.057 | Yes |
| H2a Emotional experience value ← Etiquette violation | 0.075 | -0.078 | Yes |
| H2b Social experience value ← Etiquette violation | 0.087 | -0.076 | Yes |
| H3a Functional experience value ← Interference behavior | 0.046 | -0.037 | Yes |
| H3b Emotional experience value ← Interference behavior | 0.076 | -0.125 | Yes |
| H3c Social experience value ← Interference behavior | 0.078 | -0.184 | Yes |
| H4a Functional experience value ← Struggle for execution | 0.057 | -0.597 | Yes |
| H4b Emotional experience value ← Struggle for execution | 0.014 | -0.513 | Yes |
| H4c Social experience value ← Struggle for execution | 0.030 | -0.560 | Yes |
| H5a Functional experience value ← Friendly conversation | 0.796 | 0.014 | No |
| H5b Emotional experience value ← Friendly conversation | 0.240 | 0.030 | Yes |
| H5c Social experience value ← Friendly conversation | 0.240 | 0.240 | Yes |
| H6a Functional experience value ← Advice and help | 0.235 | 0.087 | No |
| H6b Emotional experience value ← Advice and help | 0.177 | 0.075 | No |
| H6c Social experience value ← Advice and help | 0.446 | 0.050 | No |
| H7 Social well-being ← Functional experience value | 0.137 | 0.374 | No |
| H8 Subjective well-being ← Emotional experience value | 0.094 | 0.264 | Yes |
| H9 Social experience value | 0.257 | 0.994 | Yes |

It can be analyzed from the following three aspects:

1. Interfering behavior and contention for execution have a direct negative impact on subjective well-being, while etiquette violation and friendly conversation affect
subjective well-being through experience value. Advice and help have no effect on subjective well-being. (2) Violation of etiquette, interfering behavior, and striving for execution have a significant negative impact on the three levels of experience value. The friendly conversation has a significant positive impact on emotional and social experience value, but has no effect on functional experience value. Significantly. (3) Emotional and social experience value have a significant positive impact on subjective well-being, while the effect of functional experience value on subjective well-being has not been verified.

4.3 Test of mediation effect

The process program is used to test the mediating effect of the tourism experience value, and the Bootstrap(=5000) method is used to test the significance of the mediating effect\(^{(20)}\), and the demographic variables are used as control variables. The etiquette violation and friendly conversation affect subjective well-being through the experience value. Interfering behaviors and striving for execution affect subjective well-being through the experience value on the one hand, and directly affect the subjective well-being on the other hand.

5. Conclusions and Limitations

This article takes Chinese elderly tourists as the research object, and explores the relationship among tourists' interaction, experience value, and subjective well-being during the travel process, and obtains the following conclusions:

(1) The interfering behaviors and striving for execution with high interaction intensity among elderly tourists have a significant negative impact on subjective well-being. This shows that no matter how good the tourism products and services are, interference and competition among elderly tourists will weaken the sense of belonging, respect and self-realization of elderly tourists, thereby reducing their subjective well-being and travel experience.

(2) The etiquette violations and friendly conversations in interaction among elderly tourists influence subjective well-being through experience value. On one hand, it responds to the research of Jiang Ting and Zhang Feng\(^{(7)}\). On the other hand, it explores the importance of experience value in the interaction between elderly tourists. The positive or negative interactions of tourists will affect the value of tourism experience, thereby enhancing or reducing the subjective well-being of elderly tourists.

(3) The suggestion and help behaviors in the interaction of the group tourists have no significant impact on the value of the tourism experience and the subjective well-being. This is significantly different from the existing research results\(^{(7)}\). This conclusion indicates that compared with other age groups, elderly tourists may be more cautious in team interpersonal communication because of concerns about various risks.

This research also has certain shortcomings. Since the selection of research samples is mainly concentrated in the Chengdu area of China, but different countries have significant differences in the cultural models, national characteristics, etc., whether the conclusions of this article are applicable to other countries and regions still need to be further explored.

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REFERENCES

[1] Yuan Xin, Jin Niu. The prospect of the negative growth of the world population and its impact response\(^[J\). Journal of Hebei University (Philosophy and Social Sciences Edition), 2021, 46(01): 82-91.

[2] VEEHONVEN R. Is happiness a trait? Tests of the theory that a better society does not make us any happier\(^[J\). Social Indicators Research, 1994, 32(2): 101-162.

[3] Huang Liqing, Xing Zhanjun. Research on the Influencing Factors of Subjective Well-being Abroad\(^[J\). Foreign Social Sciences, 2005(3): 29-33.

[4] BAUMEISTER R F, LEARY M R. The need to belong: Desire for interpersonal attachments as a fundamental human motivation \(^[J\). Psychological Bulletin, 1995, 117(3): 497-529.

[5] Chen Ye, Zhang Hui, Dong Menglu. What does it mean to travel with you? The impact of interaction between tourists on subjective well-being\(^[J\). Tourism Tribune, 2017, 32(8): 14-24.

[6] Jiang Ting, Hu Zhengming. Research on the Interaction Behavior of Tourists in Service Contact—A Method Based on Key Event Technology\(^[J\). Journal of Tourism, 2011, 26(5): 77-83.

[7] Jiang Ting, Zhang Feng. A Study on the Influence of Visitor Interaction on Re-Patronage Intention—Based on the Perspective of Tourist Experience\(^[J\). Tourism Tribune, 2013, 28(7): 90-100.
[8] Zhang Fengchao, You Shuyang. A review of the structural dimension theory model of experience value [J]. Foreign Economics and Management, 2009, 31 (8): 46-52.

[9] Jiang Haiping, Tao Huixi, Ye Lan. An Empirical Study on the Co-creation Mechanism of Tourism Experience Value from the Perspective of SDL [J]. Journal of Shijiazhuang University, 2018(3): 58-64.

[10] Kuang Hongyun, Jiang Ruochen. The latest progress and management enlightenment of research on co-creation of the tourism experience value [J]. Management Modernization, 2019(1): 74-77.

[11] Jiang Ting. Research on the Influence of Customer Interaction on Re-Patronage Intention from the Perspective of Experience [D]. Shandong University, 2012.

[12] HARRIS K, BARON S. Consumer-to-consumer conversations in service settings [J]. Journal of Service Research, 2004, (6) : 287-303.

[13] Huang Xiang. Research on the Psychological Structure of the Tourism Experience——Based on the Theory of Subjective Well-being [J]. Journal of Jinan (Philosophy and Social Science Edition), 2014(1): 104-111.

[14] NICHOLLS R. Interactions between Service Customers: Managing On-site Customer-to-customer Interactions for Service Advantage [J]. International Journal of Service Industry Management, 2007, 18(1): 105-106.

[15] Ma Peng, Zhang Wei. A Study on the Relationship between Tourist Interaction, Experience Value, and Subjective Well-being——An Empirical Test from the Perspective of Homestay Residents [J]. Consumer Economy, 2017, 33(5): 83-90.

[16] Xie Yanjun, Peng Dan. Tourism, Tourism Experience and Symbols——A Review of Related Research [J]. Tourism Science, 2005, 19(6): 1-6.

[17] Jiang Jie, Qin Ming, Ke Yannan, Ying Xiaoping. Leisure activities and subjective well-being [J]. Tourism Tribune, 2011, 26(9): 74-78.

[18] Zhang Yan, Yu Wei. The Impact of Host-Guest Conflict on Residents' Psychological Well-being in Tourist Destinations——Based on the Research of Shandong Urban Historic Districts [J]. Economic Management, 2014, 36(4): 117-125.

[19] Yao Zhaobin, Gao Yong, Zhan Min, Zhang Jianguo. Research on the satisfaction of elderly tourists from summer vacation in rural areas [J]. Journal of Zhejiang A&F University, 2011, 28(6): 949-954.

[20] MACKINNON P, LOCKWOODC M, WILLIAMS J. Confidence limits for the indirect effect: Distribution of the product and resampling methods [J]. Multivariate Behavioral Research, 2004, 39(1): 99-128.