Research on High-order Factor Model of Leisure Agriculture Experience

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Abstract. Based on the analysis of related literature on leisure agriculture and tourism experience, the questionnaire of leisure agriculture experience factors was established, which mainly based on the "4E" model of experience, and the second-order factor model of leisure agriculture experience was established. The survey data was analysed by confirmatory factor analysis and the results showed that the fitting index is in line with the standard value requirement, which reflects the good fitting between the experience factor model and the data. It proves that the model has good reliability and validity. Then "4E" experience model is validated in leisure agricultural context. Further clarify the relationship between the four factors and their significance for the development of leisure agriculture.

1. Introduction

With the advent of the era of leisure and vacation, leisure agriculture (Agritourism/Agro-tourism) become a high-profile tourism form. There is growing recognition that agriculture is not only food production and processing of raw materials, also has idyllic landscape, biological diversity and historical and cultural relics and so on. Leisure agriculture has a low-cost home advantage in the utilization and carrying of multi-value of the agriculture, and the huge mining potential in the product development and extending the industrial chain, but also it injects sustained vitality for the recovery and promotion socio-economic development in rural areas. Tourism and agriculture in leisure agriculture form a symbiotic relationship with each other to promote mutual benefit. Ammirato & Felicetti pointed out that leisure farms like hubs as the connection point between rural network supply and tourist demand. Local villagers provide tourists with more products and better services through leisure farms, then get a benefit returns. [1] Allali et al. empirically analyzed the externalities of agriculture and its economic value of reducing rural poverty, and emphasized that developing leisure agriculture is an important method to internalize the externalities of agriculture, which can bring higher income than conventional agriculture. [2] This means that the development of leisure agriculture has become an important way to revitalize rural communities. Leisure agriculture functions from a single sightseeing begins to widen as leisure & holiday, educational experience and sports health and other integrated functions, which makes up the "Orchestra Model" of leisure agriculture, so greatly the tourist experience has been enhanced.

The immersive experience is the main way of tourism activities. The main product of tourism is experience which is its irreplaceable core value and an important impact factor in the decision-making of tourists. Therefore, creating a positive experience worth remembering is a key factor in the success of destinations and tourism companies. There is a growing consensus in the importance of the tourist experience, but the contradiction between importance on theoretical understanding and the contempt in practical research has been long-standing. In the practice of leisure agriculture development, the developments of leisure agriculture in developed countries tend to mature, and have expanded to international markets. In Europe, leisure agriculture is a popular form of rural leisure or recreation, where holidaymakers look for a variety of cultural landscapes with traditional and regional characteristics which include farming and agriculture systems such as crops, fruit trees and livestock, and enjoy local production. In the United States, leisure agriculture refers to visiting farms in operation, visiting agriculture, horticulture and the working scenes of

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agribusiness, and achieving the aims of recreation, education or active participation in farm activities. In recent years, domestic leisure agriculture has made great progress, but there are some problems in tourism products such as primary technology, homogenization, monotonous activities, lower participation, lack of cultural connotation and so on, which is difficult to meet the tourist's experience needs about recreation and entertainment, spiritual release, knowledge acquisition and self-growth, et al. This paper in the context of leisure agriculture, reviewed and analyzed relevant experience theory, and confirmed constitution structure of experience and the relationship between the factors of experience, in order to construct the experience model of leisure agriculture, promote leisure agriculture to enhance the quality of development.

2. Construction of the Experience Factors System of Leisure Agriculture

2.1 Tourism Experience and Its Components

In Chinese, "experience" has both the meanings of personal experience, real-time understanding, and inner thinking and integration. It is a psychological activity with both sensibility and rationality, [3] and at the same time it reflects the experience behavior, which so called "experiencing by body and verifying by heart". Pine and Gilmore think that experience is actually good feelings produced by a human when his emotions, physical strength, intelligence, and even spirituality reach a certain level.[4] Xie Yanjun thinks that the core element of tourism world is the tourism experience. It's the course that Travel individual changes his psychological levels and adjusts his psychological structure through contacting with the outside world.[5] Fan Youmeng and Xie Yanjun propose that tourism experience has the characteristics of embodiment, Situatedness, mobility and generation. [6] Walls defines the tourist's experience as mixing and impacting from variety of individual factors which make him involve emotionally, physically and mentally.[7] Otto &Ritchie summarize the tourism experience into four dimensions: enjoyment, inner peace, self-involvement and recognition. [8] Fernandes & Cruz define the quality of experience as a multi-dimensional high-level structure, with a corresponding six- factor structure consisting of environment, learning, entertainment, service providers, functional interests, and trust.[9] Pine & Gilmore first propose four domains of experience: escapism, esthetic, entertainment and education, and create the best experience at the intersection of four domains - the "sweet spot".[10] They then take "4E" theory further into the field of tourism and vacation. On this basis, Oh, Fiore, Jeoung divide "4E" into passive participation - active participation axis and focus - immersion axis according to visitors' different involvement levels.[11] Among them, entertainment and esthetics have been partial to passive participation, while education and escapism have been partial to active participation. Passive participation has less impacts on the destination, because the interaction between subject and object maintains a certain distance. And active participate puts activities and events into part of experiences of tourist. Along focus - immersion axis, tourist performances focus as he is attracted by entertainment and education programs of the destination, and it brings out escapism or esthetic experience as tourist immerses in the destination environment.

2.2 Leisure Agriculture Experience Factors System

Pine and Gilmore's experience factors structure can more refinedly and systematically researches express the status and value of the tourism experience, thus generates a broad impact. Existing show that Pine and Gilmore's four-domain theory of tourism experience not only provides appropriate concepts, but also provides a useful measure framework for tourism research. The customer experience and its measurement depend on the context in which it occurs, so it is necessary to explore the factors of experience in a particular context. Gil Arroyo, Barbieri, Rozier Rich summarize the connotation of leisure agriculture as following three aspects: (1) activities on the farm or other agricultural environment; (2) the authenticity of agricultural facilities or farming

activities; (3) providing accommodation and Agricultural education services.[12] Based on the perceptions and income expectations of leisure agriculture, the motivations of tourists participating leisure agriculture activities include ”away from the noise of city”, ”leisure and relaxation”, ”appreciating rural scenery” and “experience rural life”. These findings roughly correspond to the ”4E” that of escapism, esthetic, entertainment and education four domains. To sum up, ”4E” experience model is also very suiTable framework for analyzing the travel experience under leisure agricultural conditions. Therefore, this paper applies the “4E” experience model to the leisure agriculture scene, and verifies its relevance through factor analysis, and enriches the connotation of the tourism experience, expands the application scope of ”4E”, and further clarifies the characteristics of the leisure agriculture experience.

In the ”4E” experience factors, escapism is the most fundamental motivation for people to choose leisure agriculture. Escapism both refers to flee and avoid the boring part in usual life, and be switching response to burnout feel in usual life, and wish to enter a different living conditions. Tourist realizes that the transformation of time and space through escaping from everyday life is necessary for the reproduction of labour force and the healthy operation of the society. The esthetic experience of tourism is a kind of psychological experience generated by tourists when they appreciate the beauty of nature, art and other human products. At the meantime it is a kind of enjoyment in the observation without interests.[5] Esthetical pleasing of experience may be completely natural, like walking in the National Park, also can mainly be created by artificialities, like to enjoy dinner at Rainforest Cafe, or somewhere in between.[4] In leisure agriculture, the rural environment, agricultural landscape and life scenes are important esthetic objects. From the view of the connotation of entertainment and the characteristics of experience, the same with esthetic, non-utilitarian in most cases, although entertainment may also indirectly achieves some utilitarian purpose, but it primarily meets the people's entertainment nature. In leisure agriculture, the local special entertainment projects that can be excavated are very rich. Educational factor plays an important role in the tourism experience. Mature visitors regard the travel experience as a spiritual journey of individual growth and self-development, rather than just consuming landscapes, surfaces and local products.[13] Leisure agriculture is an excellent educational tool. Its farms have two major educational pathways: on-site experience and direct observation,[14] which not only can acquire knowledge, but also may be unexpectedly enlightened.

Based on the ”4E” model of Pine & Gilmore, combining the above literature analysis with reference to similar questionnaires, this study developed a questionnaire for leisure agriculture experience factors, including two parts. The first part is the basic information of tourists, a total of 6 questions; the second part as the main part of the questionnaire what is about the survey to various factors of leisure agriculture experience, a total of 16 questions, which are together with the four dimensions of tourism experience to constitute the factors system of leisure agriculture experience (see Table 1).

Table 1 Leisure agriculture experience factors system.

	Dimensions	Items/Factors
Leisure agriculture experience	Escapism	1. I feel that I am in a different time and space (Y1); 2. I feel that I am showing my other side here (Y2); 3. Here I am letting go of my usual life (Y3); 4. I am here to devote myself to the current event (Y4).
	Esthetics	1. The facilities here are pleasant (Y5); 2. I am attracted by the landscape in front of me (Y6); 3. I feel a sense of harmony (Y7); 4. It gives me a sense of transcendence (Y8).
	Entertainment	1. There is a happy atmosphere here (Y9); 2. I can get free relaxation here (Y10); 3. Here I can see many interesting activities and events (Y11);

		4. Participating in the activities here makes me feel good (Y12).
	Education	1. Many things here have inspired my curiosity (Y13); 2. Come here to open up my vision (Y14); 3. I can study directly at the scene (Y15); 4. I am enlightened and self-educated here (Y16).

According to 5-point Likert scale, the questionnaire shows recognition degree of tourists for each measure index with 1 to 5, where 1 means strongly disagree and 5 means strongly agree. Based on the above theory, the second-order model of leisure agriculture tourism experience is constructed. The first-order factors are ”4E”: escapism, esthetics, entertainment and education, which constitute the measurement model with the corresponding items of the above questionnaires; the second-order factor is the tourism experience, which directs the “4E” and constitutes the reflection model. Then structural equation model (SEM) is applied to conduct confirmatory factor analysis (CFA).

3. Data Analysis

3.1 Data Collection

In this study, four leisure agriculture parks including Jinke Modern Agriculture Park in Fuling Bashan Night Rain Scenic Area, Yinhe Plum Blossom Eco-tourism Zone in Chongqing Yubei, Nanchuan Ecological Grand View Garden and Dianjiang Jinqiao Lotus Garden Ecological Agriculture Sightseeing Tourism Area were selected to implement field research and data collection. A total of 248 questionnaires were distributed, and 212 valid questionnaires were collected, with an effective rate of 85%. The demographic and social attributes of the final sample: men account for 46.23%, while females account for 53.77%; age structure centers on the middle and young (19-55 years old), accounting for 75.47%; as to level of education, the college and undergraduate account for 68.4%; in Job type, public officials (civil servants or public institutions personnel), business people and students account for 78.77%; monthly income is focused on 3000-10000 yuan, account for 69.34%; about marriage and family status, the unmarried account for 36.32%, and the marriaged with children from infant to primary school account for the largest, that of 23.58%.

3.2 Data Analysis

Description statistics of survey data shows in Table 2. The standard deviation are less than 1, where ”Here I feel a sense of harmony”, the highest mean value for 3.22, while “watch the many interesting events and festivals”, the lowest mean value for 2.84.

Table 2 Leisure agriculture experience factors description statistics.

Items	N	Minimum value	maximum value	mean value	standard deviation
1. I feel that I am in a different time and space.	212	1	5	3.10	.923
2. I feel that I am showing my other side here.	212	1	5	3.04	.910
3. Here I am letting go of my usual life.	212	1	5	3.06	.962
4. I am here to devote myself to the current event.	212	1	5	2.99	.826
5. The facilities here are pleasant.	212	1	5	3.21	.926
6. I am attracted by the landscape in front of me.	212	1	5	3.13	.864
7. I feel a sense of harmony.	212	1	5	3.22	.843
8. It gives me a sense of transcendence.	212	1	5	3.09	.929
9. There is a happy atmosphere here.	212	1	5	2.92	.912

10. I can get free relaxation here.	212	1	5	3.10	.905
11. Here I can see many interesting activities and events.	212	1	5	2.84	.833
12. Participating in the activities here makes me feel good.	212	1	5	2.91	.934
13. Many things here have inspired my curiosity.	212	1	4	3.02	.803
14. Come here to open up my vision.	212	1	5	2.88	.944
15. I can study directly at the scene.	212	1	5	3.11	.822
16. I am enlightened and self-educated here.	212	1	5	2.93	.952

Based on the survey data of questionnaire of leisure agricultural experience factors, this study uses AMOS software 21.0 version for confirmatory factor analysis, using maximum likelihood estimation (ML). Initial fitting result is not very satisfactory. In line with the principle of following the theoretical significance, the first near then far and gradual correction, based on the modification index (MI) of the model, sequentially carrying 4 modification starting with the largest chi-square value difference, successively adding covariance between e7 ←→ e10, e6←→e11, e4 ←→ e12 and e 5 ←→e9, it finally gets structure factors model of leisure agriculture tourism experience shown in figure 1. The model can converge the estimate without negative error variance, indicating that the parameters in the model have no unreasonable solution values. Standardization regression coefficient also is known as factor loadings, representing the degree to which the measured variable may be interpreted by common variable, also characterizing the relative importance in the latent variables, the values shown in Table 3. It can be seen that both the first-order coefficient and the second-order coefficient are between 0.50 and 0.95, which indicates that the basic fit of the model is good. From the measurement error = 1-square of factor loading = 1-R2, the error variance of the observed variable can be calculated (see Table 3).

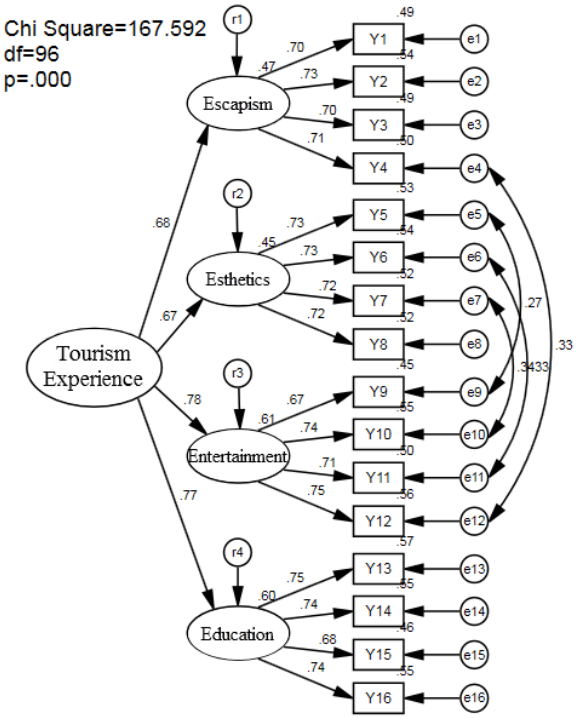

Figure 1 Structure model of leisure agriculture tourism experience factors.

According to the standardized regression coefficient and measurement error, the composite reliability (CR) and the average variance extraction (AVE) of each latent variable can be calculated to detect the intrinsic quality of the model. The AMOS output reports don't contain CR and AVE, but can be solved according to formulas (1) and (2). It is generally acknowledged that CR should

be above 0.6, AVE above 0.5. Compared with the calculation results in Table 3, the CR and AVE of each latent variable meet the requirements, which indicates good reliability and validity.

$$CR = \rho_C = \frac{\left(\sum \lambda_i\right)^2}{\left[\left(\sum \lambda_i\right)^2 + \sum \theta_{ii}\right]} \quad (1)$$

$$AVE = \rho_v = \frac{\sum \lambda_i^2}{\left(\sum \lambda_i^2 + \sum \theta_{ii}\right)} \quad (2)$$

ρ_C refers to the composite reliability;

ρ_V refers to the average variance extraction;

λ refers to the standardized regression coefficient;

θ refers to the measurement error.

Table 3 Standardized regression coefficients, CR, and AVE values.

Measurement index			Factor loading	Measurement error	CR	AVE
Escapism	<---	Tourism experience	.684	.532		
Esthetics	<---	Tourism experience	.671	.550		
Entertainment	<---	Tourism experience	.782	.388		
Education	<---	Tourism experience	.772	.404		
					.817	.528
Y1	<---	Escapism	.698	.513		
Y2	<---	Escapism	.733	.463		
Y3	<---	Escapism	.699	.511		
Y4	<---	Escapism	.707	.500		
					.803	.504
Y5	<---	Esthetics	.726	.473		
Y6	<---	Esthetics	.735	.460		
Y7	<---	Esthetics	.723	.477		
Y8	<---	Esthetics	.719	.483		
					.816	.526
Y9	<---	Entertainment	.671	.550		
Y10	<---	Entertainment	.740	.452		
Y11	<---	Entertainment	.707	.500		
Y12	<---	Entertainment	.748	.440		
					.810	.516
Y13	<---	Education	.753	.433		
Y14	<---	Education	.740	.452		
Y15	<---	Education	.677	.542		
Y16	<---	Education	.741	.451		
					.818	.530

Confirmatory factor analysis fit indexes in Table 4, the results show chi-square value (X^2) of the model for 167.592, a degree of freedom (*df*) for 96, and the ratio of the two is 1.746, lower than the standard value of 3.0; the model adaptation index including comparative fit index (CFI), tracker-lewis index (TLI), the goodness-of-fit index (GFI) and incremental fit index (IFI) reach the critical value of 0.9; normed fit index (NFI) and the relative fitting index (RFI) are lower than the 0.90 threshold; in the approximate error index, the root mean square error of approximate (RMSEA) and the standardized root mean square residual (SRMR) are both less than the standard value of 0.08. Taken together, the above indexes reflect the model good fitting with the data, which manifest that the factor model of leisure agriculture experience has more ideal fit, thus it also shows the model has good construct validity.

Table 4 Leisure agriculture experience factor CFA fitting index.

Key index	Standard value	Fitted value
x^2		167.592
df		96
x^2/df	<3	1.746
NFI	>0.90	.886
RFI	>0.90	.857
TLI	>0.90	.934
CFI	>0.90	.947
IFI	>0.90	.948
GFI	>0.90	.910
RMSEA	<0.08	.059
SRMR	<0.08	.0495

Looked up from standardized regression coefficients, entertainment factor accounts for the largest share in tourism experience(.782), which indicates that choosing leisure agriculture, most tourists relatively pay more attention to entertainment experience, which is consistent with the recreational properties of leisure agriculture. Among the entertainment factor, the factor loading of ”involving the activities makes me feel good” is the largest (.748), which demonstrates that the design of activities in leisure agriculture should focus on participation. Education factor almost is the same important as entertainment factor, which is related to the natural ecology of agriculture and the enjoyment of agricultural knowledge. Respondents with children in family have larger proportion, and these households take participating leisure agriculture activities as family tourism of edutainment, which may partially explain why education factor occupies a large proportion in the tourist experience. The factor loading of escapism factor is relatively low (.684) in the tourism experience, which reflects the living tendency of the leisure agriculture to some extent, i.e., the connection degree with usual life increases, and at the same time the discrimination reduces, but the difference is still significant. The factor loadings of esthetic factor despite is the lowest (.671), but likewise verifies esthetic value of agricultural landscapes, only relative to sightseeing tourism, people's expectations to it may not be very high.

4. Conclusions and Discussion

4.1 Conclusion

The above data analysis results show that in the context of leisure agriculture, the second-order measurement model of tourism experience constituted by escapism, esthetics, entertainment and education passes verification. ”4E” are constructal contents of experience and the embodiment of the tourist experience; while experience is an inherent feature of ”4E” and common factor. The first-order measurement model constituted by “4E” with the respective measurement index also passes verification. All measured variables reflect the features of tourism experience and the scene in leisure agriculture, which separate “4E” performance from other circumstances, and thus shows the unique value of the leisure farming experience. The model suggests that the tourism experience is a comprehensive response from the physical senses, emotions and cognition initiated by the interaction between the individual and the environment, psychology and behaviour in the tourism process.

The four factors of the tourism experience are interrelated and influenced each other. The esthetic, entertainment and education factors contribute to promote the effects of escapism experience; esthetics in addition to being an experience factor by itself, also brings pleasing feelings to other factors; entertainment brings physical and mental pleasure that consistent with secular esthetic pleasure, also is the edutainment way; education factor can be achieved through the first three experiences. If the four factors present simultaneously, they may form a so-called “sweet

zone". But four kinds of factors can't achieve to this effect by easily putting together, because sweet zone has a psychological threshold that we must break through in order to open this window of heart similar to peak experience. An ultimate "E" is more superior than four mediocre "E". Under the condition of limited resources, it is better to highlight the dominant experience factor than too much at once. This article provides concrete contents of four types experience factors that will strengthen tourism experience and implementation in the development of leisure agriculture, which have a strong practical guiding significance.

4.2 Discussion

The "4E" model of the tourism experience is highly general. With the development of society, people's travel needs will also undergo new changes, and the ever-changing technology will also create new tourist attractions (such as the combination of AR technology and tourism scenes), and help people better experience each kind of tourism products. Creative ingredients are a key factor in competitiveness, which can play a more active role, and lead new experience themes with innovation, rather than tired of tracking tourists' hobbies and interests. If need to add new factor of experience, it is likely to be creativity. But "4E" experience model will still have wide applicability, and its content will be more abundant. For leisure agriculture, it is a problem today and the future to face that is how to create a new experience project and deepen its value, which have great significance, whether for traditional agriculture or leisure agriculture development.

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