



Article Innovation and Development: An Analysis of Landscape Construction Factors in Quanzhou Maritime Silkroad Art Park

Linze Chen, Junhan Liu and Yang Zhao *

School of Fine Arts, Huaqiao University, Quanzhou 362000, China * Correspondence: 13678@hqu.edu.cn

Abstract: From the perspective of tourists, this paper takes Quanzhou Maritime Silkroad Art Park as the research object to study the botanical landscape factors concerned with tourists in the theme park. Through a questionnaire survey, and combined with interviews, the collected results were scientifically analysed using the data. According to the statistical results, the factors of plant landscape construction in the theme park concerned with tourists were summarised, extracted, and named, which were "plant landscape healing", "plant landscape culture", "plant landscape continuity", "plant landscape spatial sense", and "plant landscape aesthetic sense". Through an in-depth analysis of the five common factors of the construction of modern theme park plant landscapes, this study creatively centred on the construction of theme park landscapes and established a scientific evaluation system, combined with the development and construction of the park, and put forward innovative and constructive suggestions based on the summary and analysis results. It provides a scientific reference for plant landscape construction in other theme parks.

Keywords: theme parks; plant landscape; factor analysis; Quanzhou



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1. Introduction and Literature Review

A theme park is a type of landscape garden with the purpose of amusement and entertainment and is a modern, comprehensive leisure place with a specific style and theme built to meet the diversified leisure and entertainment needs of tourists [1]. The definition of theme parks has been interpreted differently by relevant foreign institutions (see Table 1). As a form of tourism fused with various elements, theme parks contain buildings, structures, plants, etc., that serve a specific theme and have strong and distinctive regional characteristics and cultural heritage, which have an important role and unique significance in enhancing the comprehensive strength, image, and quality of cities [2]. As artificial tourism resources, theme parks originated from early amusement parks and are modern recreational spaces that are built artificially to meet the various needs of the public with the connotation of unique cultural tourism resources and market-oriented commercial development. In addition to strengthening the cultural interest of tourists, they also redefine the image of the region [3,4] and represent a utopian urban space [5].

As early as the 1980s, Margaret King's "The New American Muse: Notes on the Amusement/Theme Park", published in 1981, and Philip Pierce and Gianna Moscato's "Tourism Theme Parks: The Practice and Possibilities of Research", published in 1985, focused their inquiries on the location of theme parks, the relationship between theme parks and interactive tourism development, etc. With the development of the social economy, the number of studies on theme parks gradually increased, and a large number of studies began to shift from the objective study of theme parks to emphasising the relationship between tourists and theme parks, such as customer satisfaction with theme parks [6–9], willingness to return to the parks [10–12] and the waiting times of tourists [13–15]. In addition, Birenboim et al. used global positioning system technology to track and record the space–time trajectory of tourists in theme parks [16] and demonstrated the importance

of tourists' activity patterns in theme parks. A study by Milman discussed the relative influence of tourists' perceptions of the theme park [17]. If tourists feel crowded in the theme park, it will have a negative impact on the return rate and satisfaction of the park. Fotiadis et al. [18] pointed out that effective marketing plans and public promotion would have a positive impact on improving the overall reputation of theme parks. Tasci developed a scale to measure visitor experiences in theme parks and discussed the influence of theory, management, and methodology on visitor experiences in theme parks [19]. Through the above literature analysis of the theme park, it can be seen that the entertainment facilities, overall atmosphere, specific theme, food types and service quality of the theme park itself are important factors in determining the satisfaction of tourists. In addition, through various data analyses of the theme park [20–24] and the investigation and analysis of the botanical landscape in the park [25–27], it can be seen that the relevant theories of the research object have become more scientific and rational.

Table 1. Different interpretations of the definition of theme parks from relevant institutions.

Organization	Implication
NPAPHA	A theme park is a park where buildings, rest houses, entertainment facilities and fun shows are built around single or several themes.
Theme Parks Online	Theme parks tend to have a large footprint and include one or even more themed areas within the park, with attractions and facilities within the territory that emphasise the theme.
Marriott	Theme parks are family amusement complexes that combine park buildings and landscape environments with continuing characteristics, using creative merchandise and recreation to enhance the fantasy atmosphere, pointing to relevant historical areas and specific themes.
IAAPA	An amusement park with themed attractions, including food, clothing, entertainment, retail stores, and/or rides.

With the rapid development of tourism, in order to enhance the local cultural image and enhance the attraction to tourists, different types of theme parks have emerged one after another and become tourist attractions for the promotion and development of various cities, from the famous lilliputian Madurodam in Holland to Disney in the 1950s [28] and from miniaturised scenic spots to large-scale theme parks. Many believe that the rise of such theme parks fosters a sense of national identity and creates places for visitors [29,30] to experience the diversity of a particular country. Furthermore, the thematization that theme parks have is a geographic expression that links and unifies ideas, symbols, or discourses [31], which will result in three different levels of products (Table 2) and provide a scientific reference for the development and construction of modern theme parks.

Table 2. Theme Park product hierarchy table.

Hierarchy	Content
The first level	Core product: Refers to the basic, intangible end-value that visitors may seek from their visit. This includes subjective feelings such as excitement, the common atmosphere of the theme park, fun, warmth, youthfulness, and energy.
The second level	Supporting, tangible products: These products include entertainment elements such as rides, events, and shows. In addition, supporting products also include strategic services such as food and beverage outlets, souvenir stores, and human resources (staff), as well as clean and safe facilities that, together, support the success of the core product and add value to it.
The third level	Facilitating products: They are different from core or support products because they are not part of the monetary value paid by the visitor. They include all other complementary services and amenities designed to promote a more satisfying and enjoyable visitor experience and to provide ancillary services.

Chinese theme parks have a long history of being a figurative manifestation of power symbols, with their main focus on leisure functions and serving the emperors of China. It was not until the Six Dynasties Period (220–589 AD) that a new type of garden, the natural garden, was created, thus breaking the emperor's monopoly on theme parks. In the residences of high-ranking officials, wealthy merchants, landowners, and Chinese literati, the lifestyle of the Chinese elite was reflected by replicating, reducing, and planting natural flora and arranging them in logical landscape spaces to create an orderly and harmonious overall atmosphere. As the times progressed, there was a gradual shift towards imitating European and North American architecture and townscapes, giving rise to the emergence of residential townships. Along with the rise and development of such themed residential areas or theme parks, the successful construction of Shenzhen Jinxiu Zhonghua Cultural Theme Park in the late 1980s reproduced traditional Chinese history, culture, and customs, and the construction of Chinese theme parks entered a period of prosperous development. The designs of Beijing Happy Valley, Wuxi Three Kingdoms Cinema, Henan Millennium City, etc., pay attention to exploring local cultural characteristics and highlight their regionalism [32,33], focusing on their narrative and immersive environments, with the ability to engage visitors at the physical, sensory, conceptual, and emotional levels.

Under the influence of philosophy and traditional culture, traditional Chinese garden plant landscaping involves natural scenery and undecorated plant landscapes. The most important thing is to express the artistic conception and achieve the goal of setting off the whole garden space. As a result of rapid urbanization and population growth, in the design of modern theme parks, it has become the mainstream for cities to use plant landscapes and natural elements to create the overall environment, which has the potential to provide a series of health, social, economic, and cultural benefits for people [34]. One of the most important characteristics of plant landscape construction is humanization, and people are eager to experience strong emotional connections with natural landscape elements [35]. Therefore, the landscape construction of a theme park should take the satisfaction of tourists' landscape preferences as the starting point, closely focus on the needs of tourists in the process of plant configuration, and use the specific forms of plants and inherent cultural connotations to strengthen the theme and atmosphere of the whole park so as to produce a positive impact [36,37]. More and more studies have shown that plant landscapes affect people's five senses in terms of colour, taste, and shape, and some plants have specific functions, which play a positive role in reducing stress, controlling diseases, and improving sleep patterns and emotional cognition [38,39]. Scientific landscape plant configurations can form a rich plant community and create a unique landscape style. In a theme park, plant landscape creation should create a characteristic plant landscape so that it conforms to the distinctive themes and subthemes of each park, while also building a rich, complex plant community structure, reflecting the diversity of the park's plant landscape. However, at present, the construction of theme parks in China mainly focuses on public buildings and facilities, ignoring tourists' perceptions of plant landscapes. A systematic theoretical framework and design techniques have not yet been formed for plant landscape construction in theme parks aimed at fulfilling the needs of tourists.

This paper conducts an in-depth study of theme park botanical landscapes based on visitor perspectives. Questionnaires and in-depth interviews were conducted, and data were tallied using the Maritime Silkroad Art Park in Quanzhou, Fujian, China. The principal component analysis method is used to compare the data on plant landscape factors in theme parks with the statistical results, deeply study the influence of plant landscape construction on theme parks, explore the relationship between theme parks and tourists, establish a scientific landscape evaluation system to provide a scientific reference for the sustainable development of theme parks in the future.

2. Materials and Methods

2.1. Research Objects

Maritime Silkroad Art Park is located in Hui'an County, Quanzhou City, Fujian Province, China, at the corner of East–West Avenue and North–South Avenue, with convenient transportation, covering an area of about 1000 hectares. The park is divided into four characteristic areas: the East Asia art performance area, the Southeast Asia art performance area, the South Asia art performance area, and the West Asia art performance area, as well as the lake landscape belt and the core performance area, forming three parts of the "one point, one belt, and four areas" design. The overall design pattern is dominated by Chinese culture, thus forming the cultural image of Quanzhou Maritime Silkroad Art Park (See Figure 1).



Figure 1. Geographical location map of Quanzhou Maritime Silkroad Art Park.

2.2. FA (Factor Analysis)

Factor analysis is a multivariate statistical analysis method proposed by British psychologist C.E. Spearman. Its method is to start by studying the internal dependent relationships between the variables [40] and reducing the variables of the intricate relationships into several comprehensive factors, namely, common factors, and then reflecting on most of the information from the original data with a few factors [41]. This study uses factor analysis to obtain five common factors to analyse the theme park plant landscape.

2.3. PCA (Principal Component Analysis)

Principal component analysis (PCA) is a data dimensionality reduction method that can transform a large number of relevant variables into a small set of irrelevant variables [42], which are called principal components. The advantage of this method is that it can simplify complex data, reduce the dimension of multiple evaluation indicators, and explain the correlation between key variables. In this study, principal component analysis was used to analyse the preselected influencing factors and, finally, determine the evaluation index affecting the theme park plant landscape (Galanis, P., The Delphi method).

3. Data Sources and Preprocessing

3.1. Determining the Proxy Indicators

From the perspective of tourist perceptions, this study follows the principles of scientificity and operability and uses them to study the plant landscape characteristics of the Maritime Silkroad Art Park (see Appendix B). Through a visit and field survey of the Maritime Silkroad Art Park and interviews with tourists, at the same time, the relevant literature is sorted out to make a statistical analysis of the evaluation indicators of the theme park with high frequency. By referring to the relevant evaluation standards in the Code for the Design of Urban Parks (CJ48-92), Code for the Design of Parks (GB51192-2016), and Code for the Design of Urban Green Space (GB 50420-2007), 18 evaluation projects were selected, which are as follows: plant colour; plant form; plant regionalism; flower-viewing landscape; plant configurations with four seasons; plants with famous flowers and trees; plants with symbolic context; plants with shade environments; plants with high safety; plants with long ornamental cycles; well-scattered plants; plants used to create an open-view environment; plants used to create interesting places; plants with edible and medicinal value; plants with a radiotherapy function; rich plant species; coordination between plants and the surrounding environment; uniformity of forest. In addition, an expert questionnaire was made for 18 evaluation items, and the evaluation items considered important by experts were used as evaluation factors to evaluate the Maritime Silkroad Art Park.

3.2. Determination of Evaluation Indicators

The evaluation factors selected in this study adopted the Delphi method; we collected data by inquiring about the knowledge and experience of several professionals and experts in related fields and analysed and evaluated key factors. The Delphi method emphasises structured, anonymous communication between individuals with expertise in a field [43], with the goal of reaching a consensus on policy, practices, or organizational decisions. The Delphi method was adopted to invite 11 experts and professors in related fields to score the above indicators and solicit expert opinions. A five-point Likert scale was used to measure the evaluation items: very important, important, fair, not important, very not important. The scores were 5, 4, 3, 2, and 1. After comprehensive consideration of feedback from experts and professors, repetitive content and infrequently used vocabulary are put forward, and the pre-set evaluation factors are modified as follows: "plant configurations with four seasons" is changed to "plant seasonal changes"; "plant structural shade environment" is changed to "canopy density"; "plants create an open-view environment" is changed to "visibility", and "rich plant species" and "uniformity of forest" are eliminated. After modification, the final 16 phrases were developed into a questionnaire based on tourists' perceptions of the plant landscape in the Maritime Silkroad Art Park.

4. Questionnaire Design and Distribution

4.1. Questionnaire Design

The questionnaire includes background questions and theme questions. The background questions include the basic information of the evaluators, such as gender, age, and the purpose of coming to the park. The subject question is composed of 16 evaluation indicators selected by the above expert questionnaire (See Appendix A), mainly aiming at the evaluators' quantitative rating of the test site.

4.2. Time and Place of Questionnaire Distribution

The survey was conducted from September to December 2021 and mainly took the form of field visits, visitor interviews, and questionnaires. A total of 348 questionnaires were distributed, 317 were effective, and the effective rate was 91.09%. Four regions in the Maritime Silkroad Art Park—Southeast Asia, East Asia, South Asia, and West Asia—were selected to distribute questionnaires (Table 3).

Place of Distribution	Attractions	Date	Week	Weather	Time	Number of Valid Questionnaires	Number of Invalid Questionnaires
Main Entrance		14 September 2021	Tuesday	Cloudy	8:30-10:30	35	3
		25 September 2021	Saturday	Cloudy	15:30–17:30	36	2

Table 3. Number, time, and place of questionnaires.

Place of Distribution	Attractions	Date	Week	Weather	Time	Number of Valid Questionnaires	Number of Invalid Questionnaires
Southeast Asia Region		5 October 2021	Tuesday	Cloudy	9:00-11:00	33	2
		23 October 2021	Saturday	Sunny	15:00-17:00	36	5
East Asia Region		4 November 2021	Thursday	Sunny	10:00-12:00	34	4
		20 November 2021	Saturday	Cloudy	13:00-15:00	34	3
South Asia Region		30 November 2021	Tuesday	Sunny	9:00-11:00	37	4
		6 December 2021	Saturday	Sunny	16:00-18:00	36	3
West Asia Region		17 December 2021	Friday	Sunny	10:30-12:30	33	3
		26 December 2021	Sunday	Sunny	14:00-16:00	34	2

Table 3. Cont.

5. Analysis of Survey Results and Evaluation Results

5.1. Description of Sample Characteristics

More local tourists came to the Quanzhou Maritime Silkroad Art Park, accounting for 57% of the total samples, among which the male and female ratio was about 1:1. Most of the samples were under the age of 25, accounting for 48.7% of the total samples. This was followed by young and middle-aged people, aged 25 to 35, who made up one-fifth of the total sample. Those aged 36 to 45 accounted for 15.5%; those over 45 accounted for 14.9 per cent. The test group mostly comprised surrounding residents, students, and retired elderly people. The main purpose of the park is to bring relatives, lovers, or friends to the park for sports, walks, and sightseeing (Table 4).

Table 4. Summary statistical table of sample characteristics.

Project	Option	Number	Proportion
	Male	163	51.6%
Gender	Female	153	48.4%
	Under 25 years old	154	48.7%
4	Aged 26 to 35	66	20.9%
Age	Aged 36 to 45	49	15.5%
	Over 45 years of age	47	14.9%
Identity	Local tourists	183	57.9%
	Foreign tourists	133	42.1%
	Once a week or more	66	20.9%
Ero auton au	Once a month or more	72	22.8%
Frequency	Once a year or more	88	27.8%
	Hardly ever	90	28.5%
	Engagement	48	15.2%
	Movement	64	20.3%
Purpose	Admiring the view	95	30.1%
-	Visit	73	23.1%
	Tourism	36	11.4%

Project	Option	Number	Proportion
	Family member	71	22.5%
Companion	Friend	109	34.5%
	lover	71	22.5%
	Tour group	12	3.8%
	Alone	53	16.8%

Table 4. Cont.

5.2. Reliability and Comparability Test of the Questionnaire

Cronbach's alpha coefficient of this study was 0.818, larger than 0.7 (Table 5), indicating that the questionnaire had high reliability. Through the KMO test, the KMO value was found to be 0.799, larger than 0.7 (Table 6), indicating that there were sufficient samples suitable for principal component analysis. After the Bartlett sphericity test, it was found that the significance (Sig.) was 0.000, less than 0.05, indicating that there was a strong correlation between the original variables in this study and the dependent variables sought, which was suitable for factor analysis. Principal component analysis was used to extract the first five common factors with eigenvalues greater than one from the independent variables (Table 7). The total explanatory variance was 68.268%, indicating that the scale had sufficient explanatory power and could well-represent the 16 items of information in the questionnaire.

Table 5. Reliability statistical analysis.

Cronbach's Alpha	Number of Terms
0.818	16

Table 6. KMO and Bartlett tests.

KMO Measurement Sampling Adequacy		0.799
Bartlett's spherical test	Chi-square last read Degrees of freedom Significance	1861.385 120 0.000
	Significance	0.000

Table 7. Explanation of total variance.

	Initial Eigenvalue			Extracted Sum of Squared Loads			Rotating Load Sum of Squares		
Elements	Total	Variance Contribution Rate (%)	Grand Total (%)	Total	Variance Contribution Rate (%)	Grand Total (%)	Total	Variance Contribution Rate (%)	Grand Total (%)
1	4.518	28.24	28.24	4.518	28.24	28.24	2.481	15.508	15.508
2	2.665	16.656	44.896	2.665	16.656	44.896	2.387	14.92	30.428
3	1.499	9.366	54.262	1.499	9.366	54.262	2.163	13.516	43.944
4	1.165	7.284	61.546	1.165	7.284	61.546	1.995	12.466	56.41
5	1.076	6.722	68.268	1.076	6.722	68.268	1.897	11.859	68.268

Note: The extraction method used was principal component analysis.

5.3. Factor Analysis

5.3.1. Extraction and Naming of Factors

The principal component analysis method was used to orthogonally rotate the original factors by using the maximum variance method, and, finally, the expressions of each factor affecting the theme park landscape construction were obtained (Table 8).

Factor **Evaluation Item** 1 2 3 4 5 The plants in the Maritime Silkroad Art Park should be X09 0.805 highly safe (nontoxic, harmless, and without thorns). The plants in the Maritime Silkroad Art Park should have X15 0.749 aromatherapy properties. The plants in the Maritime Silkroad Art Park should be X14 0.653 _ edible and have medicinal value. The plants in the Maritime Silkroad Art Park should create a X08 0.687 shaded environment. The plants in the Maritime Silkroad Art Park should have X03 0.883 local characteristics. The Maritime Silkroad Art Park should be equipped with X06 0.823 famous flowers and trees. The plants in the Maritime Silkroad Art Park should have X07 0.764 _ _ _ cultural connotations. The Maritime Silkroad Art Park should be landscaped in all X05 0.828 seasons. The plants in the Maritime Silkroad Art Park should be in X16 0.786 _ _ harmony with the surrounding environment. The plants in the Maritime Silkroad Art Park should have a X10 0.764 long ornamental cycle. The plants in the Maritime Silkroad Art Park should create X12 0.807 _ an environment with open views. The plants of the Maritime Silkroad Art Park should be X11 0.782 _ well-proportioned. The plants of the Maritime Silkroad Art Park should create X13 0.772 interesting places. The plants in the Maritime Silkroad Art Park should have a X02 0.830 variety of forms. The plants in the Maritime Silkroad Art Park should be X01 0.777 colourful. The Maritime Silkroad Art Park landscape should have X04 0.518 ornamental flowers.

Table 8. Component matrix after rotation.

Notes: Extraction method—principal component analysis method. Rotation method—Kaiser standardised maximum variance method. A rotation was converged after six iterations.

Factor 1 included X09, X15, X14, and X08, and the loads are 0.805, 0.749, 0.653, and 0.687, respectively, among which "X09 plants have high safety" has the highest load coefficient. This group of evaluation projects mainly reflects the tourists' desire for safety, health, and rest places with plants, so it is named the "plant landscape healing" factor.

Factor 2 includes X03, X06, and X07, and the loads are 0.883, 0.823, and 0.764, respectively, among which "X03 plants have local characteristics" has the highest load coefficient. This group of evaluation projects reflects visitors' concern for the cultural and distinctive nature of the botanical landscape of the park. Therefore, it is named the "plant landscape culture" factor.

Factor 3 includes X05, X16, and X10, and the loads are 0.828, 0.786, and 0.764, respectively, among which "X05 plants have scenery in four seasons" has the highest load coefficient. This set of evaluation items covers the landscape extensibility and compatibility of plants, hence, it is named the "plant landscape continuity" factor. Factor 4 includes X12, X11, and X13, and the loads are 0.807, 0.782, and 0.772, respectively, among which "X12 plant landscape scattered" has the highest load coefficient. This group of evaluation items reflects the tourists' need for a sense of scale and hierarchy in the plant structure, so it is named the "plant landscape spatial sense" factor.

Factor 5 includes X02, X01, and X04, and the loads are 0.83, 0.777, and 0.518, respectively, among which "X02 plants have different forms" has the highest load coefficient. This group of evaluation items reflects visitors' attention to the beauty of the shape and colour of the plants, so it is named the "plant landscape beauty" factor.

5.3.2. Factor Analysis of Visitors' Perceptions of Theme Park Plant Landscape

Considering the theme culture of the theme park, the plant landscape in the theme park should not only have the basic function of greening but also form the corresponding theme characteristics and context characteristics in landscape construction to meet the psychological and health needs of tourists. Therefore, tourists' perceptions of the plant landscape in the theme park will be different from those of other garden types. The five factors extracted from the data analysis reflect the five aspects of tourists' evaluations of the theme park plant landscape. This paper will further analyse the factor load in several evaluation items of each common factor and obtain the main factors so as to put forward suggestions on the construction of garden plant landscapes to meet the needs of tourists.

The variance contribution of factor 1, "plant landscape healing", was 28.24%. Of its items, the loadings of "plants have high safety" and "plants have aromatherapy function" were higher, which were 0.805 and 0.749, respectively. One-fifth of the visitors were relatives, and most of them were families with children and elderly members. Therefore, these tourists pay more attention to the safety and healing of the plant landscape. With the development of horticultural therapy and fragrant flower therapy, tourists prefer fragrant plants [44], such as Jasminum sambac (L.) Aiton) and Osmanthus fragrans, which are refreshing, have a certain sedative effect, and can relieve headache and fatigue, as well as Cinnamomum camphora (Linn) Presl, with a fresh fragrance that prevents insects, purifies toxic air, and prevents cancer. Aromatherapy plants in the construction of theme park plant landscapes can not only satisfy the visions of tourists but also satisfy the olfactory experiences of tourists. The other two items of factor 1 are "plants have a medicinal value for food" and "plants construct shaded environments". More and more people pay attention to healthcare [45]; some plants with medicinal value were widely used in the construction of the park's landscape. For example, the fruit and seeds of *Gleditsia sinensis* Lam can be used as medicine, the bark and fruit of Ligustrum compactum ((Wall. ex G. Don) Hook. f.) can be used as medicine, the leaves can be used to cure oral diseases, and the roots can be used to soak wine. Eriobotrya japonica Thunb relieves cough and is antibacterial and anti-inflammatory. The fruit has the function of moistening lungs, the leaves have the function of clearing lung and stomach heat, and the seeds have the function of treating lymphatic tuberculosis. In addition to the medicinal properties of plants, labelling the medicinal value of plants on the list can play a role in popularising science and publicity for tourists. In addition, Quanzhou is a subtropical area; the annual total solar radiation is 120 to 140 kcal/square centimetre, and the annual sunshine hours are 1800 to 2200 h. Therefore, in addition to the hidden places in buildings and pavilions, it is necessary to create a shaded environment in the plant landscape for tourists to rest. For example, huge trees such as *Ficus microcarpa* L. f. are planted as tree pools for visitors to rest, and in summer, they can also provide a cool and comfortable place for visitors.

The variance contribution of factor 2, "landscape culture of plants" was 16.656%. Of its items, "plants with local characteristics" and "collocation of famous flowers and trees" had the highest values, and the load coefficients were 0.883 and 0.823, respectively. Quanzhou Maritime Silkroad Art Park has a unique spirit as a park in terms of its cultural connotations, so visitors pay more attention to the symbolic meanings of the plants and agrestic landscape. For example, in Quanzhou, the local plant *Erythrina variegata* Linn represents the fact that it was the most important port city on the Maritime Silk Road, and it

was called the "City of Erythrina Variegata" in the Song and Yuan Dynasties. The planting of Erythrina variegata plays a role in conveying and continuing emotions, giving local tourists a sense of belonging and non-local tourists a sense of recognition, and arousing tourists' love for the park. Plants corresponding to the theme of the site in the park create a thematic atmosphere and also have a visual effect by dividing the regional space. For example, Bismarckia nobilis Hildebr and H. Wendl, with exotic characteristics and suitability for local growth, is planted in four theme gardens, along with Agave americana L., Butia capitata (Mart.) (Becc., et al.). During the tour, visitors also hope to enjoy famous traditional Chinese flowers and trees, which usually have profound cultural connotations, such as Pinus, Bambusoideae, Armenia camume Sieb, etc. The arrangement of such famous flowers and trees can set the scene of traditional Chinese gardens and arouse tourists to think about the connotations of plants and provoke infinite reverie in the poetic landscape. The last item in factor 2 is "plants with cultural connotations", which indicates the inner spiritual and cultural pursuit of tourists and the need for plants rich in cultural connotations, symbolic meanings, and local characteristics. Therefore, it includes Malus spectabilis, a symbol of auspices, happiness, family harmony, and prosperity; Punica granatum L, a symbol of an abundance of children and family reunion; and *Cunninghamia lanceolata*, a symbol of an abundance of children and wealth.

The variance contribution of factor 3, "plant landscape continuity", was 9.366%. Of its items, the value of "plant configurations with scenery in four seasons" is the highest, with a load coefficient of 0.828, indicating that tourists pay more attention to the extension degree of the plant landscape. Therefore, seasonal plant landscapes should be built according to different seasons to achieve four seasons of scenery, according to changes in the seasons of the landscape, to give tourists a sense of seasonality and novelty, further increasing the fun of the garden. This could include *Tulipa gesneriana* L. in spring, *Gardenia jasminoides* in summer, Codiaeum variegatum (L.) A. Juss. in autumn, Camellia japonica L. in winter, and other seasonal plants, so that the landscape presents the effects of seasonal changes. Due to tourists' attention to the temporal and spatial dimensions of the landscape, plants with year-round flowering periods can be planted in the plant landscape. Therefore, Cassia surattensis Burm., Nerium oleander L., and Acalypha wilkesiana Müll, which bloom all year round, can be planted in the plant landscape. Arg. and other plants extend the viewing cycle of the landscape and ensure the landscape quality of the park. At the same time, there are many structures, sculptures, roads, facilities, and buildings in the Maritime Silkroad Art Park. The coordination degree with the surrounding environment should be considered in the allocation of plants so as to form an ornamental space type visually different from a pure plant landscape. As shown in the picture below, the Shanghai Dream window (red house) combines bamboo with buildings to form a combination of roofs and plants, forming a varied and unique ornamental landscape.

The variance contribution rate of factor 4, "spatial sense of plant landscape", was 7.284%. Of its items, "plants create a wide-view environment" has the highest value, with a load coefficient of 0.807. According to the survey, the tourists whose main purpose was to play did not have high requirements for privacy in the garden, but they had some visual requirements for the spaciousness of the plant structure. The open landscape space not only provides tourists with visual comfort but also enhances the interactions between tourists. As shown in the picture below, low shrubs and ground cover should be planted at the entrance of the theme park to create a square with a wide view and facilitate the gathering and communication of tourists. The last two items in factor 4 are "plants are well spaced" and "plants construct interesting places". Visitors under the age of 36 account for 69.6 per cent of the total, with 22.5 per cent taking their families with them. These kinds of tourists pay more attention to the wildness of the plant landscape, as demonstrated in the Mountain Garden (greenhouse) due to the park shaping the bush volume to create a landscape space for tourist recreation and entertainment. Tu Tong Qu Square uses terrain and plants to create a suitable playground for children. At the same time, the well-arranged landscape enriches the park's hierarchy, so it is necessary to pay attention to the collocation between

plants in the landscape's construction. As shown in the picture below, the plant groupings of Maritime Silkroad Art Park consist of ground cover, small shrubs, large shrubs, and trees, which constitute a hierarchical plant landscape with vivid and flexible visual effects.

The variance contribution rate of factor 5, "plant landscape beauty", was 6.772%. Of its items, the values of "different plant forms" and "rich and colourful plants" are higher, with load coefficients of 0.83 and 0.777, respectively. Female tourists accounted for nearly half of the visitors, and they were more inclined to the form and beauty of the plant landscape during the survey. In addition, Quanzhou has a subtropical monsoon climate, and most of the plants are evergreen plants. A large number of green plants can easily create a single landscape colour, so tourists prefer colourful and strange plant landscapes. In the construction of a theme park landscape, plants with different colours should be configured to provide tourists with colourful visual effects, such as yellow Bougainvillea spectabilis Willd, Red Erythrina crista-galli Linn., purple Loropetalum chinense var. rubrum, etc. In the construction of a theme park landscape, plants with different colours should be configured to provide tourists with colourful visual effects, such as purple or pink Bougainvillea spectabilis (Willd.), pale purple Melastoma candidum D. Don, white Plumeria rubra "Acutifolia", and so on. The other item of factor 5 is "having a flower view", with a load factor of 0.518. Maritime Silkroad Art Park should not only provide tourists with cultural and spiritual contemplation but also meet the sensory needs of tourists. According to the survey of visitors to the park, 30.1% came to the park to enjoy the scenery. Therefore, flower appreciation plants should be planted in the plant landscape configurations of theme parks, for example, the red, stuffed, bulbous cherry Calliandra haematocephala; the bright, dense, and beautiful *Ceibaspeciosa St.Hih*; and *palmatum Thunb*, with its unique leaf shape.

6. Conclusions

Based on the perspective of tourists, this paper takes the Maritime Silkroad Art Park in Quanzhou, Fujian, China as the research object, and through questionnaires and in-depth interviews, the obtained data were counted, and a scientific landscape evaluation system was established. It was used to analyse the contextual creation of the themed park's plant landscape, deeply study the influence of plant landscape creation on theme parks, and explore the relationship between theme parks and their visitors. The evaluation results have strong reliability and rationality, provide a scientific reference for the sustainable development of theme parks in the future, fill the research gap of theme park plant landscape evaluation, and further strengthen the relationship between the research object and data analysis.

As a representative theme park in Fujian Province, the analysis of the data on the creation of the botanical landscape in the Maritime Silkroad Art Park will, to a large extent, have a positive impact on the planning and development of the whole theme park, as well as its later operations. Therefore, after sufficient research and analysis, we chose to evaluate the botanical landscape of the park using a combination of field questionnaires and in-depth interviews, and we used factor analysis and principal component analysis to process and analyse the quantified data from the questionnaire results. The results are generalised and innovative in the development of an evaluation for botanical landscapes in theme parks, and a method of evaluation was derived from them. In addition, we were able to study the specific reasons for the results and propose rationalised suggestions based on the evaluation results. The scientific evaluation system not only strengthens and updates the theme park context creation, but also provides an innovative methodology that can be used in the future for scientific research on theme park landscapes and other fields, and it provides scientific references for the development and evaluation of other theme parks.

Using statistical methods and relevant domestic and foreign literature, we conducted field research on the research subjects; while taking into account the applicable population of the park, we adopted a form of questionnaire distribution so that the respondents could fill in the questionnaire more intuitively in the actual environment and we could obtain more specific and scientific conclusions; thus, the research results of the thesis are more realistic and reliable, using research subjects representing a wide range, a large span, and

a large number of characteristics. Our method fills the current situation where there is a lack of quantitative analysis for the evaluation of theme park plant landscapes, and it has objectivity and reasonableness. In addition, this study has changed the previous situation, where the evaluation of plant landscapes only focused on the object itself; it pays more attention to the functional and humanistic attributes embedded in the plant landscape in the research process, and it pays more attention to the actual feelings and emotional connections of people, emphasising the subjective position of people in society. However, because human behavioural activities are often easily influenced by objective environments and subjective emotions, they tend to present a complex and variable situation. Therefore, it is necessary to study the methodology of environmental psychology, anthropology, and other behavioural sciences in depth and continuously expand the research field to make its research results more comprehensive and objective.

7. Recommendations

(1) The cultural value of the plant landscape should be considered in landscape construction, and plants with special connotations or native plants should be planted to enhance the emotional expression of the park, provide visitors with a sense of identity and a sense of place, and meet the spiritual needs of the people who come to the park.

(2) In the matching of plants, attention should be paid to complex plant landscapes with high and low levels to create open, visual environments. By creating interesting landscapes, the interaction between visitors and plants is increased to enrich the garden experience of visitors.

(3) Reasonable configurations should be made according to the growth cycle, flowering, and fruiting periods of plants so that the plant landscape has sustainable ornamental value and creates seasonal landscapes in line with the four seasons. This factor should be combined with relevant structures and sculptures in the park to create a rich landscape environment, thus achieving harmony and unity between the plants and the surrounding environment.

(4) Colourful flowers, fruits, and plants with specific shapes should be used in theme parks to form a visual novelty and impact. In the construction of theme parks, plant landscape configurations should also involve planting famous flowers and trees and other types of rare plants with popular properties to play a role in publicity and education, reflecting the cultural nature of the plant landscape.

(5) In the theme park's plant landscape design, it is necessary to consider the rational planning of the site and vegetation to create a suitable place for visitors to rest. It is necessary to increase the planting of large trees and aromatic plants to create secluded and cool places so as to provide physical rest and mental tranquillity.

(6) According to the different characteristics of plants, the spatial structure of the theme park should be reasonably planned, and a plant display space with practical functions should be developed to increase the ornamental value, allowing people to participate more actively in the theme scenes and gain personal experience opportunities.

(7) Virtual spaces can be set up in park planning and design in conjunction with science and technology to achieve dynamic interactions between people and plant landscapes, help the public understand the characteristics of different plants, and strengthen the relationship between the public and plant landscapes.

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Appendix A

 Table A1. Evaluation Questionnaire for Plant Landscape Construction Factors.

Evaluation Factor	Strongly Agree (5 Points)	Agree (4 Points)	Neutral (3 Points)	Disagree (2 Points)	Strongly Disagree (1 Point)
Do you think the plants in the Maritime Silkroad park should be colourful?					
Do you think the plants in the Maritime Silkroad park should have a variety of forms?					
Do you think the plants in the Maritime Silkroad park should have local characteristics?					
Do you think the Maritime Silkroad park landscape should have ornamental flowers?					
Do you think the Maritime Silkroad Park should be landscaped in all seasons?					
Do you think the Maritime Silkroad park should be equipped with famous flowers and trees?					
Do you think the plants in the Maritime Silkroad park should have cultural connotations?					
Do you think the plants in the Maritime Silkroad Park should create a shaded environment?					
Do you think that the plants in the Maritime Silkroad Park should be of high safety (non-toxic, harmless and without thorns)?					
Do you think the plants in the Maritime Silkroad park should have a long ornamental cycle?					
Do you think that the plants of the Maritime Silkroad park should be well-proportioned?					
Do you think that the plants in the Maritime Silkroad Park should create an environment with open views?					
Do you think the plants of the Maritime Silkroad park should create interesting places?					
Do you think that the plants in the Maritime Silkroad park should have edible and medicinal value?					
Do you think that the plants in the Maritime Silkroad park should have aromatherapy properties?					
Do you think that the plants in the Maritime Silkroad park should be in harmony with the surrounding environment?					

Appendix B

Name Attractions Jasminum sambac (L.) Aiton Osmanthus fragrans Cinnamomum camphora (Linn) Presl Gleditsia sinensis Lam

 Table A2.
 Plants in Quanzhou Maritime Silkroad Art Park.

N

 Table A2. Cont.

Name	Attractions
<i>Ligustrum compactum</i> (Wall. ex G. Don) Hook. f.	
<i>Eriobotrya japonica</i> Thunb.	
Ficus microcarpa L. f.	
<i>Erythrina variegata</i> Linn	

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 Table A2. Cont.

Name

Bismarckia nobilis Hildebr. and H.Wendl.

Agave americana L.

Butia capitata (Mart.) Becc.

Malus spectabilis



Attractions





 Table A2. Cont.

ъ.		
N	ame	

Cunninghamia lanceolata (Lamb.) Hook

Bischofia polycarpa (Levl.) Airy Shaw

Tulipa gesneriana L.

Gardenia jasminoides



Attractions





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 Table A2. Cont.

Name

Codiaeum variegatum (L.) A. Juss.

Camellia japonica L.

Cassia surattensis Burm.

Nerium oleander L.



Attractions





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 Table A2. Cont.

N	ame	

Acalypha wilkesiana Müll. Arg.

Bougainvillea spectabilis Willd.

Erythrina crista-galli Linn.

Loropetalum chinense var. rubrum



Attractions Name Calliandra haematocephala Ceibaspeciosa St.Hih Acer palmatum Thunb.

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