



INDEX CONSTRUCTION OF EXPERIENTIAL PARKS IN METROPOLITAN AREAS—TAKING TAICHUNG CITY, TAIWAN AS AN EXAMPLE

Yi-Chun Kuo

Department of Interior Design in Shu-Te University, Assistant Professor

Email: felix6938@gmail.com

Abstract

Since the Japanese Occupation Period, Taichung City in Taiwan has been known as Little Kyoto, and was also selected as the “Most Liveable City”. Taichung City currently has a population of nearly 3 million, and each person can enjoy a green area of 4.6 m². In recent years, Taiwan's study on metropolitan parks has mainly focused on leisure benefits, environmental education, recreational attractiveness, leisure motivation, revisit intention, and satisfaction. There is no relevant work aim to explore the construction indicators of metropolitan parks with the experience economy as the main framework. Therefore, it is necessary for this study to construct urban park indicators with experience as the main framework. This study synthesizes experience economy, recreation and parks and other literatures, and the results of constructing experience-based park recreation indicators are: aesthetics, education, environmental education, recreation attractiveness, leisure motivation, benefit, revisit intention, satisfaction, loyalty, and environmental attitude and recreational experience, etc., and used the Analytic Hierarchy Process to investigate the opinions of Taiwan's industry, government and academia on the construction of indicators. It was found that the “recreational experience” of constructing an experiential park in a metropolitan area is the most important factor, and the others are in order. “Service Quality”, “Sustainability”, “Education”, and “Aesthetics”. Related important findings are also discussed in the text.

Keywords: Experience Economy, Metropolitan Park, Analytic Hierarchy Process (AHP), Taichung City

Introduction

With a population of nearly 3 million, each person in Taichung City, Taiwan can enjoy a green area of 4.6 square meters (Public Works Department, Taichung City Government, 2020). Taichung has been known as Little Kyoto and was also selected as the “Most Liveable City” and “Happy City” (CommonWealth Magazine, 2007). Various types of forest parks, metropolitan parks, community parks, green paths, and riverbank spaces can be seen in the urban area, allowing citizens and tourists to fully immerse themselves in the recreational environment. Because the parks are located within the residents’ living circle, they are the most commonly used and frequently contacted places for all citizens except for their families and work environments. Therefore, the experiences and views of citizens and tourists on park recreation, as well as the factors that affect the construction of metropolitan parks, are important factors in park planning.

Taichung City has a total of 64 parks, with over 40% of residents visiting the park at least once a week

and 40% of residents using park green spaces at least once a week, indicating that residents of Taichung City use parks frequently, which is in line with the recreational behavior of Taiwanese people’s preference for convenient transportation and abundant natural resources in the vicinity (Department of Budget, Accounting and Statistics, Taichung City, 2020). However, in order to build a city full of greenery, a green park environment alone is not enough. It is necessary to involve tourists in order to become a vibrant area and park. According to a discussion of the experiential economy by Pine & Gilmore (2013), park construction can incorporate four experiential and sensory contexts (aestheticism, education, entertainment, and escape). Similarly, Rubinstein & Parmelee (1992) also suggested that people have an attachment to their environment and place. Based on the arguments of Pine and Rubinstein, the created places can provide visitors with experiential experiences such as aestheticism, education, and entertainment. Through these experiential experiences, tourists will have a deep impression and emotion towards the recreational site, which is what

Rubinstein regards as place attachment.

Reviewing relevant research on parks in Taiwan, most of which focuses on the functionality of park use (Ho, 1979; Chen 1995; Chen, 2003), studies such as the overall park activities, satisfaction, and preferences (Chen, 1996; Lin, 1997; Ho, 1997; Lin, 1998; Wu, 2002; Liao, 2002), as well as the use behavior and satisfaction of specific facilities or spaces (Huang, 2003; Liao, 2004), park accessibility, service level, and network system (Lin, 2001), and the relationship between the distribution pattern of metropolitan parks and the recreation quality. Therefore, there is a considerable lack of discussion on the construction of park-related indicators in Taiwan, especially in an era that values the quality and experience of recreation, experiential parks in metropolitan areas that can provide a large number of people in the metropolitan areas with the opportunity to participate in recreational, exercise, leisure, gatherings, and other functions are the focus of public attention. Therefore, it is necessary to construct indicators that can explain experiential parks in metropolitan areas through literature reviews and surveys. In response, this study proposes the following

research objectives: (1) to compile relevant indicators for parks through a literature review; and (2) to construct experiential park indicators for metropolitan areas using the AHP method.

Literature Review

Experience Economy

Pine and Gilmore (1999) indicated that the participation of consumers can be divided into four types: educational, entertainment, esthetic, and escapist: (1) educational: consumers actively participate and learn new information from their experiences; (2) entertainment: through the passive absorption of human sensory experiences, entertainment can put consumers in a state of passive acceptance of sensory stimuli; (3) esthetic: Consumers are passively involved and deeply immersed in the context; (4) escapist: It is an alternative experience that escapes from reality and daily life. With consumption concepts that began to pursue higher levels of characteristics and feelings, people also attach greater importance to self-experience in the process and obtain profound and unforgettable experiences through interaction. "Experience" sells a feeling, with an economic value far

higher than any commodity or service, and its added value is also the highest.

Metropolitan Park

The Construction and Planning Agency of Taiwan planned to establish metropolitan parks with an area of over 100 hectares in 1988, mostly located on the edge of the city, providing citizens with functional places such as leisure, exercise, recreation, appreciation of wildlife, natural vegetation, environmental education, guidance, or other cultural activities. Maruthaveeran (2016) proposed that the construction of metropolitan parks should meet the following conditions: (1) located on the edge of metropolitan areas and having convenient transportation and high accessibility; (2) utilize publicly owned land with lower economic value or abandoned land for recycling and reuse; (3) serve as a buffer zone to suppress excessive urban expansion; (4) provide sufficient hinterland for a temporary large-scale activity venue that is not dominated by facilities; (5) offer functions of flood prevention, visual aesthetics, and ecological conservation.

Metropolitan parks are environments that provide residents with

outdoor leisure activities within metropolitan areas. In addition to combining the concepts of urban forests and ecological greening, they also have various leisure facilities and recreational activity designs to meet the needs of tourists of different ages and usage patterns. Relevant studies focus on environmental education (Hsieh, 2018; Liu 2019; Chen, 2020), recreational attractiveness (Chiao, 2016; Chen, 2018; Chen, 2020), leisure motivation (Wu et al., 2018; Weng, 2019), leisure benefits (Chen, 2018; Wu et al., 2018; Weng, 2019; Chen, 2020), revisit intention (Chiao, 2016; Chen, 2018), satisfaction (Chiao, 2016; Wu, 2018), loyalty (Ho, 2017), and environmental attitude, leisure experience (Wu, 2016). From the recent research on metropolitan parks in Taiwan mentioned above, it can be seen that in recent years, research on metropolitan parks in Taiwan has mainly focused on leisure benefits, followed by environmental education, recreational attractiveness, leisure motivation, revisit intention, and satisfaction, without experience economy. Therefore, it is necessary to construct metropolitan park indicators that focus on experience.

Methods

Framework

In addition to referring to the experience economy dimensions of Pine & Gilmore (2013) and Green Land Management and Facility Maintenance Manual of Parks by Construction and Planning Agency, MOI (1999), the indicator construction also referred to relevant studies of parks (Wu, 2016; Chiao, 2016; Ho, 2017; Hsieh, 2018; Chen, 2018; Wu et al., 2018; Liu, 2019; Weng, 2019; Chen, 2020; Chen, 2020). In summary, the results of these studies on the indicators of park recreation include aesthetics, education, environmental education, recreational attractiveness, leisure motivation, benefits, revisit intention, satisfaction, loyalty, environmental attitude, recreational experience, etc.

Regarding the item construction of the indicators, through reviewing the relevant research and reports on national parks and ecological protection in Taiwan, the researcher understood the principles of park planning, methods of ecotourism guidance and check, and principles and contents of ecotourism business check. Taiwan Ecotourism White Paper published on the Tourism Bureau Administrative Information Network introduces the definition, norms, cases, and

relevant tourist guidelines of ecotourism. Efforts were also made to understand how to incorporate the principles of traceless movement into environmental education through the Taiwan National Park website. This study also referred to the guidelines and content of environmental education in Eco-Schools, and SERVQUAL service quality questionnaire by Parasuraman, Zeithaml and Berry (1988) to define service quality, satisfaction dimensions, and items, as shown as Table 1.

Respondents

This study aims to construct indicators for experiential parks in metropolitan areas. Experts and scholars from industry, government, and academia were invited to conduct an AHP on the indicators and their content. There were five representatives from industry, three representatives from government departments, and four representatives from academia. Through the evaluation of indicators by various experts and scholars, indicators of experiential parks in metropolitan areas that meet the perception of the Taiwanese people were constructed.

Analytic Hierarchy Process

Table 1. Checked Items of Indicators of Experiential Park in Metropolitan Areas

Theme	Indicator	Item
Aesthetics	Natural resources	Whether the natural resources in the park have a sense of beauty
	Hardware facilities	Whether the hardware facilities in the park possess aesthetic imagery
	Aesthetic literacy	Whether the park conveys aesthetic concepts to tourists
	Environmental creation	Whether the creation of a park environment possesses aesthetic concepts
Education	Environmental education	Whether the park facilities allow people to experience the meaning of environmental education
	Humanistic education	Whether the park's software and hardware facilities have humanistic education functions
	Environmental protection behavior	Whether the park's software and hardware facilities showcase and promote environmental behavior to tourists
Recreational experience	Historical humanities	Whether the park showcases unique local history and culture
	Exercise and leisure	Whether the environment in the park provides exercise and leisure purposes
Service quality	Overall satisfaction	Residents' or tourists' overall satisfaction with park recreation
	Facility satisfaction	Residents' or tourists' satisfaction with recreational park facilities
	Recreational quality satisfaction	Residents' or tourists' satisfaction with recreational park quality
Sustainability	Natural ecology	The richness of local ecological resources or special species
	Resident identification	Residents support local natural resources and cultural heritage

Source: Designed by this study

The AHP compares each element in pairs and evaluate the relative importance of each element to each other. When comparing various elements, the strength relationship between their advantages and disadvantages must satisfy transitivity. Based on the hierarchical structure of the “Index Construction of Experiential Parks in Metropolitan Areas,” this study circled the evaluation scale of the relative importance between each question item and the two criteria. The AHP evaluates the definition of scale division, with 1 being equally important, 3 being slightly important, 5 being important, 7 being very important, 9 being extremely important, and 2, 4, 6, and 8 being compromise values.

Result

Main Indicator Analysis

According to Table 2, the industry, government, and academia believed that in the checklist of experiential parks in metropolitan areas, the ranking of [themes] is “recreational experience” first, “service quality” second, followed by “sustainability,” “education,” and “aesthetics.”

Based on interviews, Huang (1991) proposed that a metropolitan park is an environment that provides outdoor leisure activities for residents in metropolitan areas. In addition to combining the concepts of urban forests and ecological greening, it should also have a variety of exercise and leisure facilities, a recreational activity design, and integrate the historical and cultural aspects of the area to meet the needs of tourists of different ages and usage patterns. Therefore, a good recreational experience and high service quality are listed as the top two essentials. Whether experiential parks in metropolitan areas maintain a beautiful and sustainable appearance and bring the concept of environmental sustainability to tourists through conceptual education so that they won't forget to protect our planet when enjoying the current moment of leisure. For the overall environment, aesthetic design will give tourists a sense of identification and a good recreational experience and promote the motivation for leisure and recreation again, as shown as Table 2.

Table 2 Checklist of AHP Weight

Theme	Weight	Local Weight	Ranking	Dimension	Local Weight	Ranking
Education	0.03945	0.12553	4	Humanistic education	0.32748	2
				Environmental protection behavior	0.41260	1
				Environmental education	0.25992	3
Service quality		0.29224	2	Overall satisfaction	0.53961	1
				Facility satisfaction	0.16342	3
				Recreational quality satisfaction	0.29696	2
Sustainability		0.16495	3	Resident identification	0.33333	2
				Natural ecology	0.66667	1
Aesthetics		0.11119	5	Environmental creation	0.33333	2
				Hardware facilities	0.33333	2
	Aesthetic literacy			0.33333	2	
	Natural resources			0.35333	1	
Recreational experience	0.30610	1	Historical humanities	0.25000	2	
			Exercise and	0.75000	1	

Secondary indicator analysis - recreational experience

According to the analysis results in Table 3, the primary factor is exercise and leisure, and the checked item is “Whether the environment in the park provides exercise and leisure purposes.” The next is “Whether

the park showcases unique local history and culture.” It can reflect that a comprehensive planning of exercise and leisure environments and the incorporation of historical and cultural elements are key factors in recreational experiences, as shown as Table 3.

Table 3 Checked Items of Recreational Experience

Theme	Indicator	Item	Ranking
Recreational experience	Historical humanities	Whether the park showcases unique local history and culture	2
	Exercise and leisure	Whether the environment in the park provides exercise and leisure purposes	1

Secondary indicator analysis-service quality

According to the analysis results in Table 4, the primary factor is overall satisfaction, and the checked item is “Residents’ or tourists’ overall satisfaction with park recreation.” The next is satisfaction with recreational quality, and the checked item is “Residents’ or tourists’ satisfaction

with recreational park quality.” The third is satisfaction with recreational facilities, and the checked item is “Residents’ or tourists’ satisfaction with recreational park facilities.” McKinney, Yoon, and Zahedi (2002) pointed out that the emotional response of tourists will accumulate over time and form an overall evaluation that reflects the service quality, as shown as Table 4.

Table 4 Checked Items of Service Quality

Theme	Indicator	Item	Ranking
Service quality	Overall satisfaction	Residents' or tourists' overall satisfaction with park recreation	1
	Facility satisfaction	Residents' or tourists' satisfaction with recreational park facilities	3
	Recreational quality satisfaction	Residents' or tourists' satisfaction with recreational park quality	2

Secondary indicator analysis-sustainability

According to the analysis results in Table 5, the primary factor is resident identification, and the checked item is “Residents support local natural resources and cultural heritage.” The next is natural ecology, and the checked item is “The richness of local ecological resources or special species.” In the process of constructing sustainable development in residential areas, the most important thing is the identification of residents’ community awareness and community participation. The key to residents’ identification lies in their attitude towards ecological resources. The construction of awareness will affect the way residents

participate in public affairs, as shown as Table 5.

Secondary indicator analysis – education

As to primary environmental protection behavior in Table 6, the checked item is “Whether the park facilities allow people to experience the meaning of environmental education.” The next is humanistic education, and the checked item is “Whether the park’s software and hardware facilities have humanistic education functions.” The third factor is environmental education, and the checked item is “Whether the park facilities allow people to experience the meaning of environmental education.” When the

Table 5 Checked Items of Sustainability

Theme	Indicator	Item	Ranking
Sustainability	Natural ecology	The richness of local ecological resources or special species	2
	Resident identification	Residents support local natural resources and cultural heritage	1

environment and humanistic education take root in daily life, humanistic concepts and environmental protection

actions can be internalized as a part of daily life, as shown as Table 6.

Table 6 Checked Items of Education

Theme	Indicator	Item	Ranking
Education	Humanistic education	Whether the park's software and hardware facilities have humanistic education functions	2
	Environmental protection behavior	Whether the park's software and hardware facilities showcase or promote environmental behavior to tourists	1
	Environmental education	Whether the park facilities allow people to experience the meaning of environmental education	3

Secondary indicator analysis-aesthetics

According to the analysis results in Table 7, the primary factor is natural resources, and the checked item is "Whether the natural resources in the park have a sense of

beauty." The next is hardware facilities, and the checked item is "Whether the hardware facilities in the park possess aesthetic imagery," the aesthetic literacy with the checked item of "Whether the park conveys aesthetic concepts to tourists," and the environmental creation

with the checked item of “Whether the creation of a park environment

possesses aesthetic concepts” as shown as Table 7.

Table 7 Checked Items of Aesthetics

Theme	Indicator	Item	Ranking
Aesthetics	Natural resources	Whether the natural resources in the park have a sense of beauty	1
	Hardware facilities	Whether the hardware facilities in the park possess aesthetic imagery	2
	Aesthetic literacy	Whether the park conveys aesthetic concepts to tourists	2
	Environmental creation	Whether the creation of a park environment possesses aesthetic concepts	2

Conclusion

Through a literature review, this study constructed five main indicators of “recreational experience, service quality, sustainability, education, and aesthetics” and uses the AHP method to compare the order and weight of secondary indicators such as “historical humanities, exercise and leisure, overall satisfaction, facility satisfaction, recreational quality satisfaction, resident identification, natural ecology, humanistic education, environmental protection behavior, environmental education, environmental creation, hardware

facilities, aesthetic literacy, and natural resources.” According to the analysis results, “recreational experience” is the most important factor in constructing experiential parks in metropolitan areas. The next is “service quality,” followed by “sustainability,” “education,” and “aesthetics.” First, the most important aspect of “recreational experience” is exercise and leisure indicators in “Whether the environment in the park provides exercise and leisure purposes.” The next is the historical humanities indicator in “Whether the park showcases unique local history and culture.” These indicators reflect that the incorporation of exercise and

leisure, environmental planning, and historical humanities are critical factors in the recreational experience. The strategy of constructing planning should start with life and context, shape the sensory experience and mindset identification of the recreationists, thereby captures the attention of the recreationists and generates motivation to revisit. Recreationists attach importance to the “experiential value” of aesthetic pleasure. Second, the most important aspect of “service quality” is the overall satisfaction indicator of “Residents or tourists’ overall satisfaction with park recreation.” The next is the satisfaction with recreational quality indicator of “Residents or tourists’ satisfaction with recreational park quality.” The satisfaction of experiential parks in metropolitan areas is determined by a comprehensive comparison of the actual perception of park facilities, recreational quality, and service expectations of visitors. Third, the most important aspect of “sustainability” is the resident identification indicator of “Residents support local natural resources and cultural heritage.” The next is natural ecology, and the checked item is “The richness of local ecological resources or special species.” Efforts can be made to deeply cultivate the sustainable cul-

tural power of cities through local reflection on cultural uniqueness and environmental education and training.

References

- Bao-Xiu Lin (2001). *A Study on the Relationship between the Distribution Type of Urban Park and the Recreation Quality of Residents*. [Master's thesis, Institute of Horticulture]. National Taiwan University.
- Department of Construction, Ministry of the Interior (1999). *Handbook for the Management of Park Green Space and Maintenance of Facilities*. Department of the Interior and Construction Administration.
- De-Tao Liao (2002). *Discussion on the operation and management of green space in Taichung City*. [Master's Thesis, Department of Leisure Management]. Chaoyang University of Science and Technology.
- Guo-Bin Wu (2002). *A Study on Tourists' Satisfaction with the Use of Urban Green Park Road: A Case Study of Jingguo Green Park Road in Taichung City*.

- [Master's thesis, Institute of Land Management]. Private Feng Chia University.
- Guo-Yuan Wu (2018). *A Study on Sports Participants' Motivation for Sports Participation, Satisfaction of Sports Facilities and Leisure Benefits-A Case Study of Weiwuying Metropolitan Park*. [Master's thesis, Institute of Leisure Management]. Corning University.
- Hao-Xuan Xie (2018). *Kaohsiung City Primary School Teachers Choose Kaohsiung Metropolitan Park to Implement Environmental Education Hindrance Factors and Teaching Needs*. [Master's Thesis, The Department of Forestry management]. National Pingtung University of Science and Technology.
- Hong-Bin Chen ,& Shi-wei Zeng ,& Mei-Jing Li ,& Zhi-ping Lv (2003). A study on the satisfaction of residents in Magong City with the use of neighborhood parks. *Journal of Pengji*, 6, 251-270.
- Hong-Wei Hou (2017). *Research on the Correlation between Environmental Design Elements,*
- Local Dependence, Environmental Healing Perception and Loyalty: A Case Study of Weiwuying Metropolitan Park*. [Master's Thesis, The Department of Architecture]. National Cheng Kung University.
- Hou-Nan Cai (1991). *The Establishment of Urban Parks in Taiwan, (1895-1987)*. [Ph.D. dissertation, Institute of Civil Engineering]. National Taiwan University.
- Hui-Mei Chen (1995). *Establishment of post-use evaluation model for neighborhood parks*. [Master's thesis, Institute of Horticulture]. National Taiwan University.
- Hui-Mei Chen ,& Yan-Zhou Lin (1998). A study on the influence of ornamental sequences on landscape assessment. *Chinese Horticulture*, 44(2), 168-178.
- Jin-Xiong Hou (1990). *A study on the relationship between recreation motivation and recreation cognition in recreation areas*. [Ph.D. dissertation, Institute of Horticulture]. National Taiwan University.
- Jin-Xiong Hou (1997) *Landscape*

- perception and landscape design. *Tokai Journal*, 38(6).
- Jin-Yi Lin (1997). *Park planning and design*. Zhengzhong Bookstore, 15-36.
- McKinney, V., Yoon, K., & Zahedi, F. M. (2002). The Measurement of Web-Customer Satisfaction: An Expectation and Disconfirmation Approach. *Information Systems Research*, 13, 296-315.
- Parasuraman, A., Zeithaml, V. A., & Berry, L. (1988). SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. *1988*, 64(1), 12-40.
- Pine II, B.J. and Gilmore, J.H. (1999). *The Experience Economy*. Harvard Business School Press.
- Pine, B. J., & Gilmore, J. H. (2013). The experience economy: past, present and future. In *Handbook on the experience economy*. Edward Elgar Publishing.
- Rubinstein, R. I., & Parmelee, P. A. (1992). Attachment to place and the representation of the life course by the elderly. *Place attachment* (Vol 12).139-163.
- Shu-Zhen Cho (2016). *A Study on the Attractiveness, Satisfaction and Willingness to Revisit of Chimei Museum Park in Tainan Metropolitan Park for Parent-child Tourists*. [In-service Master's Thesis, The Department of Leisure and Recreation Management]. Asia University.
- Sreetheran Maruthaveeran (2016). The Perception of Social Safety in a Green Environment: A preliminary study at the Kepong Metropolitan Park. *Asian Journal of Environment-Behaviour Studies*, 1(1), 99.
- Taichung City Comptroller's Office (2020). *Statistical operations*. <https://www.dbas.taichung.gov.tw/16985/Normalnodelist>.
- Taiwan National Parks Digital Collection Theme Network (2023). *Park Green Space Policy*. https://npda.cpami.gov.tw/tab1/web1_main.php?mod=G1&page=10.
- Ting-Huan Weng (2019). *Research on the motivation and benefit of parent-child leisure activities in Kaohsiung Metropolitan Park*. [Master's thesis, Department of Physical Education]. National Pingtung University.
- Wei-ling Liu (2019). *Development of 12-year national basic education environmental education core literacy curriculum - taking Taichung Metropolitan Park environmental education facilities as an example*. [Master's

- Thesis, Department of Environmental Education and Management & Department of Science Education and Applied Studies]. National Taichung University of Education.
- Wei-Zhi Liao (2004). *A Study on Accessibility and Service Level of Neighborhood Parks in Taichung City*. [Master's thesis, Institute of Architecture and Urban Planning]. Fengjia University.
- World Magazine (2020). Live more like an individual in __ .
<https://www.cw.com.tw/article/5101983>
- Xiao-Heng Wu (2016). *A Study on the Relationship between Leisure Experience and Environmental Attitude of Tourists in Tainan Metropolitan Park*. [Master's thesis, Department of Ecological Leisure Education]. National Pingtung University.
- Yong-Xu Chen (2020). *A Study on the Correlation between Recreation Attraction and Leisure Benefits of Kaohsiung Weiwuying Metropolitan Park*. [Master's thesis, Institute of Cultural and Creative Industries]. Daren University of Science and Technology.
- Zhao-Rong Chen (1996). *Discussion on the influencing factors of user satisfaction in neighborhood parks*. [Master's thesis, Institute of Horticulture]. National Taiwan University.
- Zhao-Xiong Huang (2003). *The network system of Taichung Neighborhood Park was discussed based on the service level and spatial structure characteristics*. [Master's thesis, Institute of Architecture and Urban Planning] Fengjia University.
- Zi-Ying Chen (2020). Exploring the feasibility of promoting environmental education from the perspective of environmental management strategy: A case study of Tainan Metropolitan Park and Chimei Museum Park. [Master's Thesis in Environmental Education]. College of Environment and Ecology. National Tainan University.