A Comparative Study on the Utilization Configuration and Characters of Urban Comprehensive Park in China and Korea

Xiaoyan Li[1, 2, a], Seicheon Kim[2, b], Kwangwoo Hong[2, c], Xinmei Jin[2, d], Yingyi Du[2]

[1] Ecology and Landscape Architecture College, Dezhou University, Dezhou 253000, China

[2] Landscape Architecture Department, Chonbuk National University, Jeonju 561765, Korea

[a]lixiaoyan-qq@163.com, [b]sckim@jbnu.ac.kr, [c]kwhong81@jbnu.ac.kr, [d]jxm1221@naver.com

Abstract. Based on the survey of Daming-lake park in Jinan city of China and Deokjin park in Jeonju city of South Korea, by on-the-spot investigation, questionnaire survey and in-depth interview, the study analyzed the users' essential attributes, visiting characteristics, landscape reference, and compared the differences of utilization characteristics between two parks in order to offer a basis suggestion for humanization designing of urban parks.

Keywords: urban park; utilization configuration; use characteristics.

1. Introduction

As an important part of city landscape system, urban comprehensive park, which can not only supply large area of green space but also offers variety of out-door recreation, sports and leisure facilities, plays an irreplaceable advantage and role in cityscape and environment protection[1].

Many scholars have studied landscapes from different domains and different lays, and achieved many fruits. Arriaza (2004), for instance, according to serious investigation and summed assessing the visual quality of landscapes [2]. Van den Berg and Koole (2006) found that the variables of place of residents, age, socio-economic status, farming background, preference for greening political parties and recreational motives were correlated with relative preferences for wild versus managed nature scenes [3]. Huazhang et al. (2013) explored landscape perception and recreation needs in urban green space in Fuyang, and found the main recreation inclination and landscape preference so that they can give some corresponding improvement measure proposals [4].

This study attempts to compare the differences of demographic and social economic attributes, the utilization characteristic between Deokjin Park in Jeonju and Daming-lake Park in Jinan. Furthermore, preference rating for landscape elements and attributes of urban parks aims to reveal the details of the content and design of landscape structure appealing to the respondents, which we expect to generate more visit.

2. Research method

In this study, we take Deokjin park in Jeonju, Korea, and Daming-lake park in Jinan, China as samples. The data for this study were mainly derived from on-the-spot investigation, questionnaire survey and in-depth interview, which were distributed randomly to the visitors in above mentioned parks from February 10th to April 20th in 2015. Taking the form of 'spot-distributing and spot-collecting', the questionnaire survey was carried out in half weekdays and half weekends to make sure of the randomicity and typicality of distribution. Totally 700 questionnaires were distributed and 662 effective questionnaire paper were collected. The effective percentage is 94.6%. Descriptive statistics was conducted to analyzed visitors' attributes, the characteristics of utilization, and the preference landscape elements.

3. Result and analysis

The demographic and socio-economic characteristics. Visitors' activities relate to personality's gender, age, occupation, education, and other factors, in this study we set several items to record visitors' demographic and socio-economic attributes, as the results in Table 1.

Table 1 General facts samples by region

Attribute		Different Regions															
		Daming-Lake Park								Deokjin Park							
		A1		A2		A3		A-Total		B1		B2		B3		B-Total	
		N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Sex	Male	56	52.8	56	49.1	38	38.0	150	46.9	42	36.8	46	38.3	60	55.6	148	43.3
	Famale	50	47.2	58	50.9	62	62.0	170	53.1	72	63.2	74	61.7	48	44.4	194	56.7
Age	≤ 18	2	1.9	4	3.5	6	6.0	12	3.8	5	4.3	7	5.8	13	12.1	25	7.3
	19 to 29	38	35.8	30	26.3	34	34.0	102	31.9	36	31.3	36	30.0	28	26.2	100	29.2
	30 to 39	36	34.0	42	36.8	26	26.0	104	32.5	28	24.3	25	20.8	26	24.3	79	22.8
	40 to 59	22	20.8	26	22.8	28	28.0	76	23.8	44	38.3	42	35.0	30	28.0	116	33.9
	≥60	8	7.5	12	10.5	6	6.0	26	8.1	2	1.7	10	8.3	10	9.3	22	5.8
School	Primary School	2	1.9	0	0	4	4.0	6	1.9	2	1.8	2	1.7	0	.0	4	1.2
Career	Middle and highSchool	26	24.5	34	29.8	18	18.0	78	24.4	30	26.3	26	21.7	38	35.2	94	27.5
	University	66	62.3	70	61.4	70	70.0	206	64.4	58	50.9	60	50.0	52	48.1	170	49.7
	Graduate School	12	11.3	10	8.8	8	8.0	30	9.4	24	21.1	32	26.7	18	16.7	74	21.6
Occupation	Student	12	11.3	8	7.0	14	14.0	34	10.6	28	24.6	40	33.3	34	31.5	102	29.8
	Official	30	28.3	24	21.1	24	24.0	78	24.4	8	7.0	10	8.3	10	9.3	28	8.2
	Office worker	46	43.4	48	42.1	40	40.0	134	41.9	44	38.6	22	18.3	28	25.9	94	27.5
	Commerce	8	7.5	20	17.5	6	6.0	34	10.6	2	1.8	2	1.7	6	5.6	10	2.9
	House wife	2	1.9	6	5.3	4	4.0	12	3.8	22	19.3	32	26.7	16	14.8	70	20.5
	Retirement	6	5.7	8	7.0	12	12.0	26	8.1	0	.0	10	8.3	10	9.3	20	5.8
	Others	2	1.9	0	.0	0	.0	2	.6	10	8.8	4	3.3	4	3.7	18	5.3
Income	I	12	11.3	8	7.0	20	20.0	40	12.5	38	33.3	58	48.3	44	40.7	140	40.9
	II	30	28.3	46	40.4	22	22.0	98	30.6	26	22.8	16	13.3	10	9.3	52	15.2
	III	42	39.6	34	29.8	44	44.0	120	37.5	26	22.8	24	20.0	18	16.7	68	19.9
	IV	12	11.3	10	8.8	8	8.0	30	9.4	14	12.3	16	13.3	30	27.8	60	17.5
	V	4	3.8	6	5.3	2	2.0	12	3.8	0	.0	4	3.3	2	1.9	6	1.8
	VI	6	5.7	10	8.8	4	4.0	20	6.3	10	8.8	2	1.7	4	3.7	16	4.7
Family number	1	8	7.5	6	5.3	12	12.0	26	8.1	8	8.2	20	17.2	18	17.6	46	14.6
	2-3	70	66.0	72	63.2	48	48.0	190	59.4	40	40.8	48	41.4	34	33.3	122	38.6
	4-5	28	26.4	34	29.8	40	40.0	102	31.9	48	49.0	48	41.4	50	49.0	146	46.2
	≥6	0	.0	2	1.8	0	.0	2	.6	2	2.0	0	.0	0	.0	2	.6
	Whole	106		114		100		320		114		120		108		342	

In order to keep a possible randomness, data were collected in three areas of each park； Because of different of currency and economic levels, the monthly income was transformed into 6 grades(I,II,III,IV,V,VI) as the consumption and economic levels in natives. The income values which are relate to each grade can be got in Table 2.

Table 2 The classification of income grade in two countries

	I	II	III	IV	V	VI
KRW(won)	Less than 100	101-200	201-300	301-400	401-500	More than 500
RMB(yuan)	Less than 2000	2001-4000	4001-6000	6001-8000	8001-10000	More than 10000

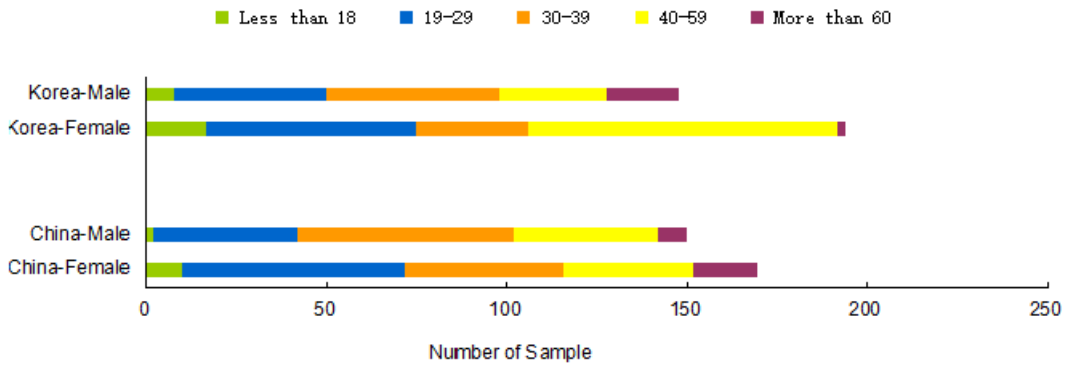


Fig. 1 Response to age structure based on male and female in two parks.

As we see in Fig. 1, among all visitors to Daming lake park, there are 46.9% males and 53.1% females while in Deokjin park the proportion of male and female is 43.3% and 56.7%. More higher proportion of female may have a certain relationship with traditional family mode in Korea that 'Men's work centers around outside and women's work centers around home' , so that women often have more time and opportunities to visit urban parks. In Damin-lake park, no matter male or female visitors, the proportion of below 18 and above 60 is a little low, with a probable reason that Chinese pupils have a heavy course load and little recreation time; In Deokjin park the stage between 40 and 59 holds a biggest proportion, because many Korea female center around home after they get married especially after having children, so no mater weekend or weekdays they have more relative free time to arrange.

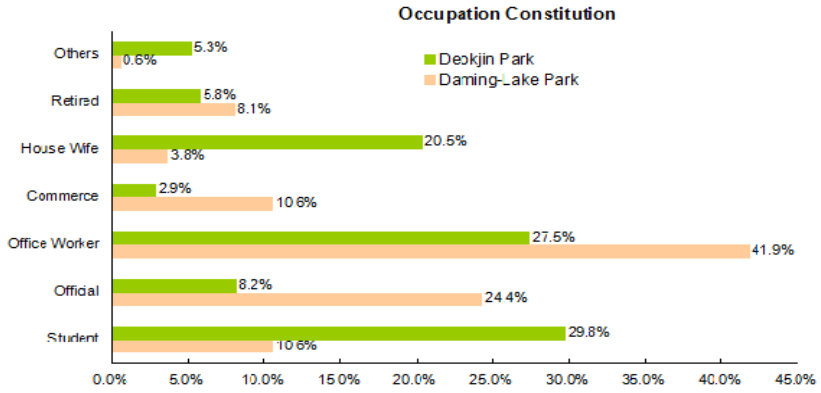


Fig. 2 Response to occupation structure in two parks.

The official and company office workers in China institute an 'eight-hour working day system' and often can knock off at 5:30 pm., so some of them select to relax in park after work; However in Deokjin park investigation a high housewife proportion(20.5%) and student proportion(29.8%) were found, with a strong contrast (3.8% and 10.6%) in Daming-lake park. High student proportion dues to that Deokjin park locates near an university, and many college students and graduate students consist one important component of visitors.

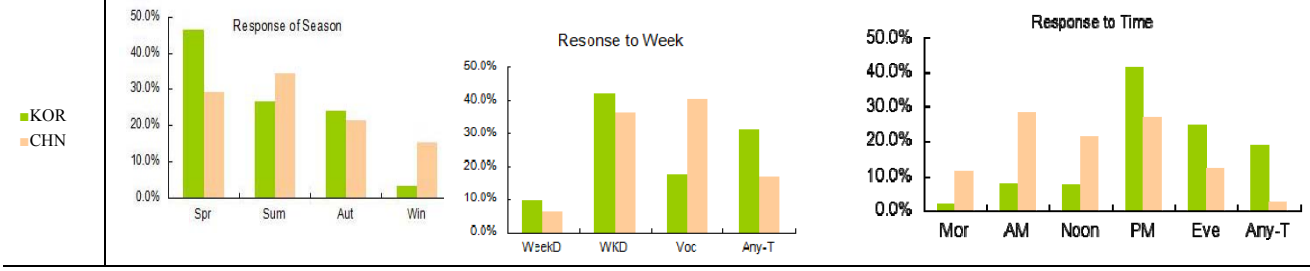
Income grades obey a nearly normal distribution. In Deokjin park low-income takes a big proportion because of more students and housewife who don't take an economic occupation. For the

living number of family, 2-3 persons or 4-5 persons pattern are mostly found, perhaps due to a phenomenon that two-generations or three-generations family mode.

Utilization characteristics of time. Integrating the response to seasons, workdays and detail times, it was found that overall, Chinese and Koran residents are inclined to visitor urban landscape in spring, weekends and vocation, but there's difference on the detail time, for instance Chinese residents prefer to visit in morning while Korean visitors like in afternoon and evening (Table 3). Maybe it relates to different life habits of two countries.

Table 3 Response to the utilization characteristics of visitors

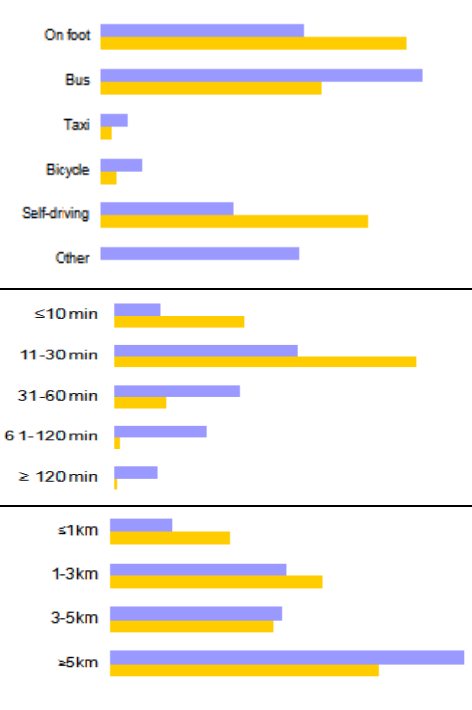
PARK		SEASON				WEEK				TIME					
		Spring	Summer	Autumn	Winter	Weekday	Week-end	Vocation	Any time	Morning	AM	Noon	PM	Evening	Any time
KOR	N	254	146	132	18	34	150	62	112	2	30	28	156	92	70
	%	46.2	26.5	24.0	3.3	9.5	41.9	17.3	31.3	0.5	8.0	7.4	41.5	24.5	18.6
CHN	N	174	206	128	92	26	146	162	68	44	108	82	104	48	6
	%	29.0	34.3	21.3	15.3	6.5	36.3	40.3	16.9	11.4	28.0	21.2	26.9	12.4	1.6



Characteristics of transportation means, required time, and distance from home. Comparing the diversity of transportation means to Daming lake park, the vehicles to Deokjin park are mainly concentrated on only three types: on-foot(37.4%), by bus(26.9%) and self-driving(32.7%) (Table 4), but Deokjin park have a better accessibility from the view of required-time and distance from home. About 87.7% Korean visitors could reach Deokjin landscape within 30 minutes while Chinese only 46.9%. Accessibility is considered as an important index for a good urban park standard.

Table 4 Response to transportation means, required time, and distance from home

	Options	A		B	
		N	%	N	%
Vehicle	On foot	80	25.0	128	37.4
	Bus	126	39.4	92	26.9
	Taxi	10	3.1	4	1.2
	Bicycle	16	5.0	6	1.8
	Self-driving	52	16.3	112	32.7
	Others:Electric Vehicle	16	5.0	0	0
	Motorcycle	6	1.9	0	0
	Tourist Car	14	4.4	0	0
		320	100	342	100
Time	within 10min	30	9.4	90	26.3
	11-30min	120	37.5	210	61.4
	31-60min	82	25.6	36	10.5
	1-2h	60	18.8	4	1.2
	Above 2h	28	8.8	2	.6
		320	100	342	100
Distance	Within 1Km	26	8.1	54	15.8
	1-3Km	74	23.1	94	27.5
	3-5Km	72	22.5	72	21.1
	Above 5Km	148	46.3	120	35.1
	Total	320	100	342	100



Visit frequency and visit purpose. The response to visit frequency shows a partial normal distribution, main visiting frequency to Daming lake park is 1-2times each month, purposes of visit are concentrated on ‘walk, landscape viewing, taking photos’, a certain proportion of ‘accompanying elderly and children, morning exercise’; Among Deokjin park visitors, largest proportion visit frequency is 1-2 times each month, with the purpose of walk and landscape viewing.

4. Proposal for planning of comprehensive park

According analysis of the utilization and configuration of two parks, some different characters were found and may due to different social sex structure, life habit and work style patterns. In the planning of comprehensive parks, appropriate spaces and facilities which could satisfy different users should be well planned and developed, for instance, because of high female or student rate more facilities which suit for them should be given more considerations.

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