

**Research on Recreation Preference of Country Parks in Beijing**

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## **Research on Recreation Preference of Country Parks in Beijing**

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### **Abstract**

The paper took the Nanhaizi Country Park and the Dongba Country Park as samples to study recreationists' preferences. First, we selected 24 recreational indicators and divided them into 9 categories according to their properties, then, these indicators were used to do a random survey of 411 recreationists to determine their recreation preferences. Factor Analysis was conducted on the data by SPSS 19.0, the results showed that main recreation preference activities of people were traditional outdoor sports, group activities and relaxation activities, these activities were the greatest common factors which explained 30.918% variance, therefore, recreation projects such as fitness activities and group activities can be designed in country parks; as the common factor 4 and common factor 5, sightseeing and photography as well as activities enabling people close to nature belonged to the lowest preference activities, which explained 9.023% and 8.397% variance respectively. According to results of recreation characteristics, recreation motivations and recreation preferences, country parks should develop recreation items with their own characteristics. The study can provide some references for planning and management of country parks, improvement of recreational space quality and tourism study.

**Keywords:** recreation preferences, motivation, Factor Analysis, country parks, Beijing

## Research on Recreation Preference of Country Parks in Beijing

### Introduction

Country park ring of Beijing is a natural buffer zone, as an important part of urban green space, country parks of Beijing can serve as new recreation places for citizens. Since large scale construction of the country parks in the first green belt in 2007, Beijing has built 50 country parks open to residents free of charge. They received annually about 22.3 million visitors, providing in an increasing way nice and good relaxation and recreation environment for citizens. As construction of country park ring was gradually implemented, more and more people went to country parks (Qi et al., 2010) to enjoy beautiful scenery and recreational facilities, which could improve their life quality and also enhance sense of identity and belonging for cities (Zhang et al., 2013). While recreational facilities of country parks are similar to those of city parks, the construction of them lacks wildness and own features. So recreation motivations and preferences of people for country parks should be taken into consideration in the process of construction, it was important to develop recreation projects with their own characteristics and improve management for parks to make full use of their recreation function (Wang et al., 2010; Xiao et al., 2011).

At present, for study on country park, researchers pay more attention to these aspects of ecology protection, coordination of relationship among land utilization within countryside, strategies of planning and management, design of visual quality as well as connotation of culture, while research on recreation environment and planning of the park based on people's demands is still relatively weak. Therefore, by analyzing recreational features and preferences, the paper studied rationality of environment facility layout and recreation project design of country parks in Beijing. Recreation project should be designed on the basis of recreationists' demands, the propose is to give full play to location advantages of country parks and develop their leisure features, which reflects people-oriented thoughts and provides some suggestions for the planning and construction of country parks.

### **Review of Literature**

As the concept of tourism, it is difficult to reach an absolute consensus on comprehensive and unified concept of recreation (Sharpley & Jepson, 2011; Kil et al., 2014; Harshaw & Sheppard, 2013; Eriksson & Nordlund, 2013). Some scholars explain concept of recreation from different perspectives, as Smith (1983) put it in the book of Recreation Geography: Concept of recreation was not easy to define. In practice, recreation usually

meant a set of special and observable land use, or a suit of activity programme. Recreation also included tourism, entertainment, sports, games as well as some culture and other aspects (Fix et al., 2013; Orams, 2013). Since the 1990s, scholars had tried to explore the dynamic characteristics of tourists in a certain region in terms of time and space and others (Tao et al., 2016). Beeco et al. (2014) applied Recreation Suitability Mapping (RSM) and GPS Visitor Tracking (GVT) to compare preferences and travel patterns of recreationists, in order to reduce waiting time of recreational place.

For research on recreation preference, Gimblett et al. (2001) studied simulation model of recreation behavior by using rule-driven autonomous agents to substitute for human visitors, and combining GIS to show the environment used for dynamically simulating recreation behavior, they also did survey of tourists in Broken Arrow Canyon, Sedona, Arizona to obtain data of behavior habit and studied recreation preference. Wu et al. (2007) stated in detail the force model that was used to study the influential factors for residents' decision making for their choice between inner city or around city recreation, and studied features of recreational behavior and preference of local residents around urban areas in Hangzhou through questionnaire. Cheng et al. (2008) studied recreation preference of residents in the suburb of Changsha in Hunan Province via questionnaire survey, and analyzed the correlation between demographic characteristics and recreation preference, on the basis of the study, development strategies of recreation programs in suburbs were proposed. Li and Jan (2009) collected 200 sets of group scenes, selecting 100 sets of group scenes randomly and analyzing 812 separate landscapes, founding that natural landscape played a key role in ancient leisure of China, and indicated that traditional recreation preference of China was different from that of western. However, from a different angle, Wu (2010) studied the recreation preference, behavior features and recreational influence factors of women in city parks, the study reflected some common character and individual characteristics by studying typical cases, and provided useful reference for improving recreation quality of urban women. Zhang et al. (2015) studied public preference for construction of natural recreation space based on questionnaire investigation, the result showed that public had diverse demands for main functions of recreation space, and people had different choices for length of recreational time because of their occupation, income as well as age, the paper came up with some strategies of planning from aspects of main functions, highlights of scenery, length of recreational time and recreational group. In recent years, many scholars have focused on gender differences in study of recreation features and recreational needs. There are differences between men and women due to spatial perception, physical condition, social status, responsibilities and others, which results in different demands for recreational space and facilities between the two groups. Deng et al.

(2014) took the Guangzhou People's Park as a case, by field survey and questionnaire, used statistics and observation methods to analyze gender difference characteristics of recreation behaviors in city parks.

## **Methodology**

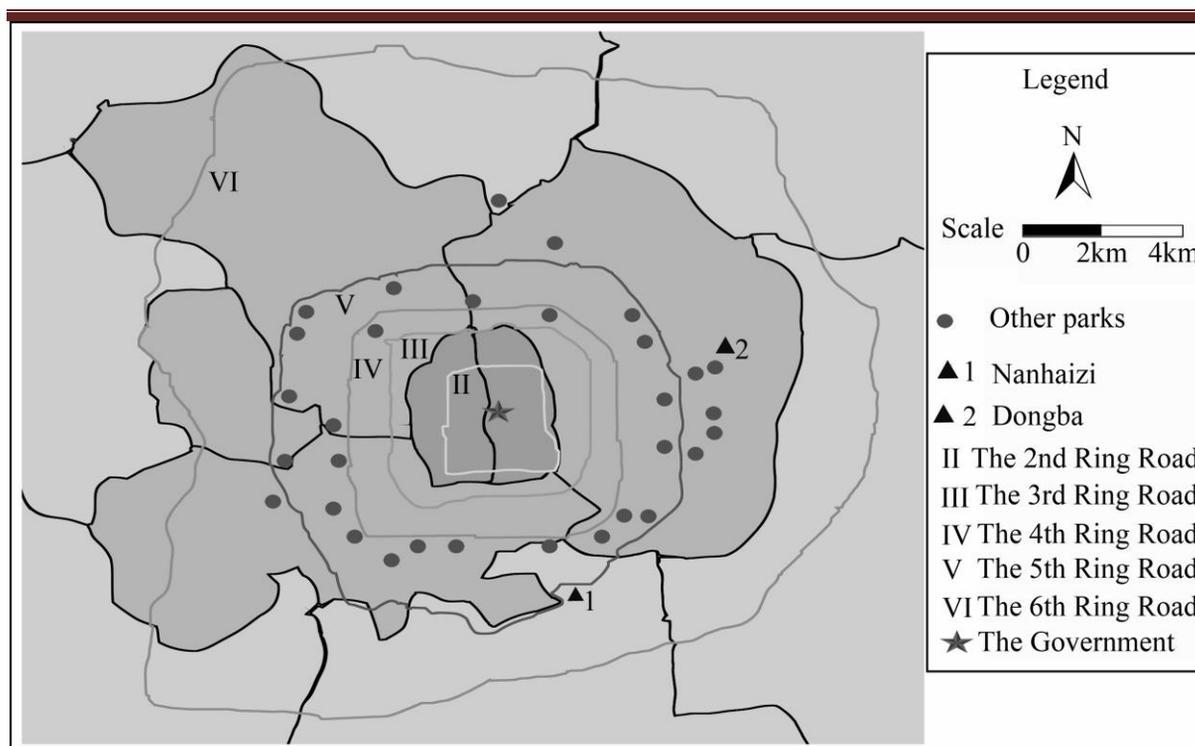
### ***Study Areas and Methods***

The research chose the Nanhaizi Country Park and the Dongba Country Park as study cases and used methods of questionnaire survey and field interview, by this way, we investigated demographic characteristics, travel ways, time radius and travel frequency as well as recreation space preference of recreationists and other aspects, finally, SPSS 19.0 was used to process and analyze the data.

### ***Situation of Samples***

Nanhaizi is one of the largest country parks and also is the largest wetland park in Beijing, the total area of the park is 11.65 km<sup>2</sup> (Figure 1). Since the founding of New China in 1949, the park has gradually become a dump of Beijing. Beijing Municipal Government made huge investment to transform the landfill into a country park, which greatly improve ecological environment of the South in Beijing and become a model of ecological restoration projects. The park includes five functional areas, namely amusement area, fitness area, comprehensive service area, leisure resort area and forest camp area, which makes recreationists enjoy country interest in nature. Recreation facilities mainly include boats and fitness roads, water parks, playground, climbing and jumping activities area, stadiums, green leisure area, forest cabins, camping tents, recreational vehicle experience and others.

Dongba Country Park is a comprehensive country park that combines fitness with sightseeing, the area of the park's green space is about 2.87 km<sup>2</sup> (Figure 1), farmland garden, forest garden and art garden form three major touring areas, which represents the theme of "ecology, fitness, leisure." There are many fruit trees in farmland garden, which can meet people's demands of picking, leisure, fitness, entertainment and tourism. There are various facilities for recreation, such as dry skating arena, tennis court, basketball court, national culture square, children's playground, rest pavilion for the old, fitness square, cabin as well as landscape pavilions. The park's landscape, with its rich seasonal change, is a delight to watch. A variety of wild flowers bloom during spring, many people are attracted to enjoy the scenery, camp, barbecues and do physical exercise. This park can bring comfortable experience to recreationists because of its very large size and a large area of per capita for activity.



**Figure 1.** The location map of the two country parks.

### ***Design of Questionnaire***

In the process of research on recreation preference, we issued questionnaires twice. The first research can be seen from the reference literature (Zeng & Qi, 2012), the results showed that major activities of recreationists in country parks were appreciating scenery, walking dogs, doing physical exercise, camping, barbecuing, group entertainment, diabolo, playing in sand, fishing and other activities. In the aspect of recreation preference, walking and jogging, ball games, exercising with equipment and picking were the most popular activities, and there were also some preferences for water activities. Security was the greatest demand, and people's recognition for park's wildness was not high. Catering facilities in the park were mostly canteens; in terms of forest recreation, people had a preference for traditional leisure facilities, while fitness, camping and entertainment were also popular; in the aspect of consumption willingness, people's consumption demand for recreation facilities was not high enough, and entertainment facility was a better choice; the majority of recreationists chose paths of natural material and comfortable chairs, people had the same inclination to fitness paths and bicycle roads.

Based on the results of main activity preferences of recreationists in the first questionnaire (including the given preference types in options, preference activities filled out in other column as well as recreation activities observed by investigators) and the preliminary investigation results, this research was improved by practice and expert advice

for many times and combined recreation activity indexes used in relevant references (Yu & Wang, 2008; Su et al., 2007), choosing 24 recreational indexes which were divided into 9 categories on the basis of nature of each target. The factors mainly includes sightseeing and shooting (scenery, performance, photography), relaxation (walking, walking dogs, breathing technique), traditional outdoor sports (ball games, exercise with equipment), group activities (dancing, kicking shuttlecock), land-based leisure activities (picnic, camping, barbecuing, flying kites), water activities (boating, fishing, swimming), children's game (sand-excavating, swing), to be close to nature (picking, forest crossing) and orienteering activities (rock climbing, skateboard, orienteering). From Appendix 1, a scoring system was adopted with five classes (1 = not at all preferred, 2 = not very, 3 = average, 4 = appreciated and 5 = much preferred), which was used to measure the preference degree of people for recreation activities.

### ***Issuing Questionnaires***

The method of obtaining data by issuing questionnaires in the field and collecting them on scene was adopted in the study. In 2015 (on April 29, May 1, May 2, May 16), we conducted field investigation in the parks chosen for this study. According to the result of previous observation for the quantity of recreationists, we confirmed that the proportion of issuing questionnaires during weekday, weekends and holidays was 1:2:3. In the process of survey, researchers selected recreationists who had enough time as respondents, and tried to avoid a detailed explanation of options to people to ensure objectivity of data. A total of questionnaires were 444, among which 300 questionnaires were issued in the Nanhaizi Country Park, the rest were issued in the Dongba Country Park. With 33 invalid questionnaires were eliminated, 411 sets of questionnaires were finally used for analysis, with recycling rate being 92.6%. The situation for invalid questionnaires included unfinished topic, same answers and cases that weren't responding as request.

## **Results**

### ***Reliability and Validity Analysis of Scale***

Scale's reliability refers to degree of dependability. A reliable scale usually possesses consistency, stability, reliability and predictability. It is necessary for scales to have credibility and validity. This paper used Cronbach  $\alpha$  to measure inner reliability of scales, the higher the coefficient of Cronbach  $\alpha$  is, the more consistent the content of scale tends to be. Usually, if Cronbach  $\alpha$  coefficient is above 0.80, it means that reliability of scales or questionnaires is very good, and 0.70-0.80 is good, 0.65-0.70 is minimum acceptably value, it is not to be trustworthy under 0.65.

Firstly, we used SPSS19.0 to analyze the scale's reliability of recreation preference, it was concluded that Cronbach  $\alpha$  coefficient of the scale was 0.712, which was at a nice level, and then it could be used as basis of this study. Secondly, the KMO and Bartlett's test were used to determine the correlation among 9 types of recreation activities. The results showed that the KMO statistical value of recreation activities was 0.759 between 0.7 and 0.9, the value of Bartlett's spherical test was 548.317, it was at a marked level in the 28 degree of freedom (Table 1), which had condition for analysis.

**Table 1.** KMO test and Bartlett's test of sphericity of recreation activity preferences.

KMO test and Bartlett test of sphericity		
Kaiser-Meyer-Olkin metric of enough samples		0.759
Bartlett's test of sphericity	Approx. Chi-square	548.317
	Degree of freedom (df)	28
	Significant level (Sig.)	0

### **Demographic Characteristics**

In this survey, respondent's gender was well-distributed, recreationists were mainly dominated by young people (74.9%), among which, childhood and adolescence accounted for 12.6%, the middle-aged were 14.4%, and the aged were 10.7%. In the aspect of profession, the percent of company employees accounted for 33.8%, which was quite high; The difference of percentage among staff of government institution (13.9%), teachers (14.1%) and students (14.4%) was small (Table 2).

**Table 2.** Recreationists' demographic characteristics.

Variable	Values of Distribution	Frequency	Percentage (%)
Age	Under 6	7	1.7
	7 to 17	45	10.9
	18 to 28	104	25.3
	29 to 44	152	37
	45 to 59	59	14.4
	60 to 74	41	10.0
	Above 75	3	0.7
Education background	Junior high school or below	111	27.0
	High school or technical	96	23.4
	Junior College	68	16.5
	Undergraduate course	115	28.0
Profession	Master degree or above	21	5.1
	Company employee	139	33.8
	Staff of government institution	57	13.9

	Individual entrepreneur or boss	20	4.9
	Teacher	58	14.1
	Student	59	14.4
	Retiree	33	8.0
	Housewife	42	10.2
	Others	3	0.7
Gender	Male	205	49.9
	Female	206	50.1

### ***Travel Ways, Time Radius and Travel Frequency***

According to the survey results (Table 3), 86.2% of the recreationists could come to country parks within 60 minutes, the proportion of people whose time radius was from 1 to 2 hours was 9.7%, and only 4.1% of recreationists needed more than 2 hours to get to the parks. People who went to the parks by car accounted for 54.5%, while 18.2% of people went to parks by bus, which was similar to the percentage of those who traveled on foot (14.8%), and only a minority of people took a taxi or rode an electric car to go to parks. Country parks are located between outer suburbs and outskirts of a city. We did this survey on weekday, weekends and holidays, on weekdays, most recreationists of country parks were nearby residents, some people who lived far away from country parks got there only during weekends and holidays. As the result showed that the majority of recreationists came to country parks in an hour, which indicated that recreationists of the parks were surrounding residents. In addition, people chose private cars and public transportation as their major way to travel. Convenient traffic expands people's trip distance, and attraction of country parks to recreationists partly offsets negativity of time radius. With convenient conditions of transportation, even if it takes relatively long time, people are willing to visit country parks.

The number of times that recreationists come to country parks also reflects the parks' attraction. The paper surveyed travel frequency of people who went to parks in a period of three months. It was found that 52.6% of people came to country parks for the first time, 33.6% of them for 2-5 times, 7.7% more than 30 times (including some went to parks every day). With government's promotion of construction of country parks, as well as websites' propaganda for country parks being favorite choice for recreational destination, more and more people come to country parks. What's more, at present, fast-paced life and high-pressure work makes people need some ways to relax, and country parks have proper location as well as nice natural landscape and other advantages, therefore, it is a good choice for people to be leisure and do other exercise in country parks. Recreationists who live near a country park usually choose it a daily exercise place, and revisit rate is fairly high.

However, in the long run, construction of country parks should be strengthened so as to attract potential recreationists and ensure high revisit rate (Table 3).

**Table 3.** Recreationists' basic characteristics of leisure.

Variable	Values of Distribution	Frequency	Percentage (%)
Travel ways	Walk	61	14.8
	Bicycle	21	5.1
	Electric car	10	2.4
	Bus	75	18.2
	Private car	224	54.5
	Taxi	20	4.9
Time radius	within 10 minutes	49	11.9
	10-20 minutes	96	23.4
	20-30 minutes	127	30.9
	30-60 minutes	82	20.0
	1-2 hours	40	9.7
	Over 2 hours	17	4.1
Times	Once	216	52.6
	2-5 times	138	33.6
	6-10 times	16	3.8
	11-30 times	9	2.3
	Over 30 times	32	7.7
Types	Families with children	223	54.3
	Families without children	53	12.9
	Friends	102	24.8
	Unit collective	16	3.9
	Alone	17	4.1
The number	None	12	2.9
	one people	39	9.5
	Two people	81	19.7
	Three people	74	18.0
	Four people	65	15.8
	Five people	43	10.5
	More than five people	97	23.6

### ***Recreational Space Preference***

We investigated recreationists' preference for leisure space by questionnaires, and the results of statistical analysis are shown in Figure 2. The types of recreational spaces were obtained through field surveys of nearly 30 country parks in Beijing, the spaces were set up by most country parks. As can be seen, the data indicated that the total proportion of water activity areas (31.6%) and tree-lined rest areas (29.4%) was much higher than other recreational spaces in the samples, and the former was the most popular one. This is related to climate and afforestation of Beijing. Compared with Shenzhen and other southern cities of China, Beijing lacks water badly. The coverage of urban green space is quite low in Beijing while people have an innate tendency to waterscape and views with woods. Thus, the two

types of recreational spaces in country parks are more popular with people. It can embody wildness of country parks to play in tree-lined rest areas, and the areas can provide beautiful and quiet environment for recreationists, some people like walking and appreciating scenery in such places, others like exercising in the area. Design of recreational facilities should meet people's demands in the process of country parks' construction, and requirements for different group should be taken into consideration. From the survey, we found that, among recreationists, families with children accounted for 54.3%, therefore, it is necessary to provide some facilities for children. Furthermore, 11.2% recreationists selected recreational culture square. We found that there were large recreational cultural square in many country parks, where people sang, kicked shuttlecock, danced. Through conversation, we knew that people who joined these activities were residents living in communities surrounding the country parks. They came here regularly to take part in group activities. In this situation, country parks played a similar role in that of city parks. As can be seen from Table 2, jog and bike paths had not been widely recognized by people in country parks. From Cross-tabulation Analysis between age and recreational space, the results showed that recreationists choosing jog paths (69.3%) were mostly youth from 18 to 44, and most of people who selected bike paths were 45 to 59 (37.5%), which was followed by recreationists of 7 to 17 (25%) and 29 to 44 (percentage was 25% for both groups). With the popularity of healthy leisure lifestyle, this kind of recreational space would be more popular with people.

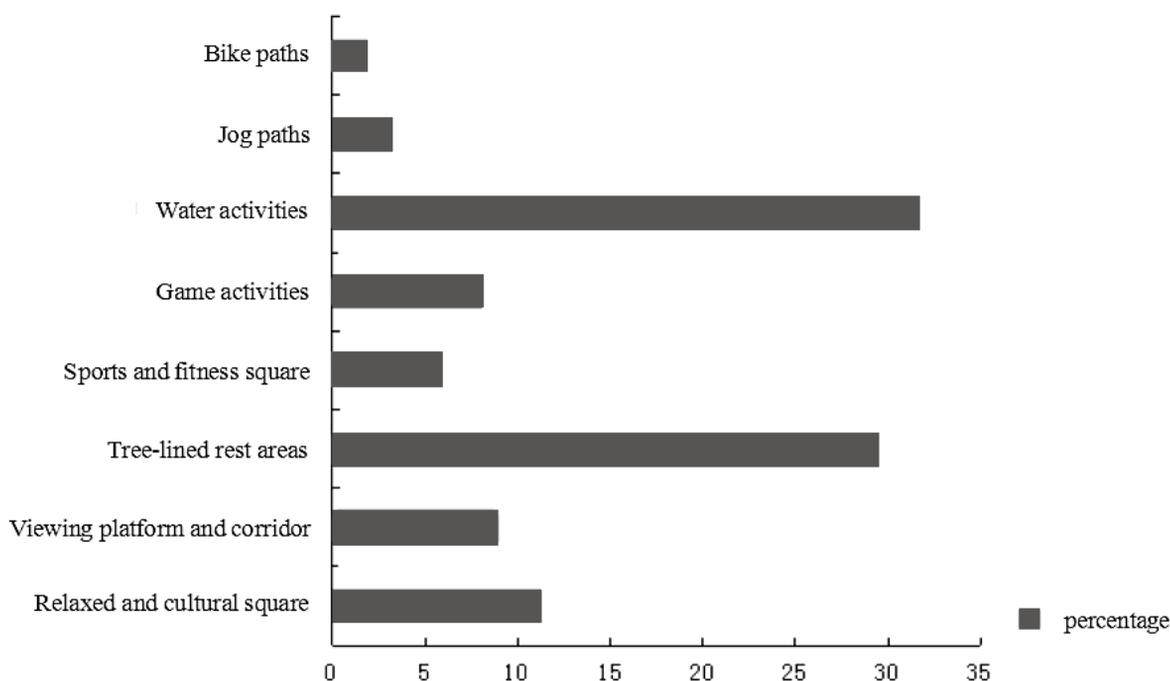


Figure 2. Recreational space preference.

### ***Factor Analysis***

This research adopted Likert five point scale method to measure people's preferences for recreation activities (1 - not at all preferred, 2 - not very, 3 - average, 4 - appreciated and 5 - much preferred). Finally, after processing the collected data, we used Principal Component Analysis to perform Factor Analysis for 9 recreation activity variables according to the standards that characteristic roots were greater than 1, and extracted five common factors. On the basis of the result of Factor Analysis, summary table is listed as Table 4.

**Table 4.** Factor analysis table of preference for recreation activity types.

Recreation categories	Explanatory variables	Cumulative explanation variables	factors					Commonality
			Common factor 1	Common factor 2	Common factor 3	Common factor 4	Common factor 5	
Traditional outdoor sports	30.918	30.918	0.833	-	-	-	-	0.731
Group activities			0.779	-	-	-	-	0.686
Relaxation			0.526	-	-	-	-	0.66
Land-based leisure	15.999	46.917	-	0.885	-	-	-	0.816
Water exercise			-	0.659	-	-	-	0.617
Orienteering activities	10.594	57.511	-	-	0.914	-	-	0.864
Child games			-	-	0.539	-	-	0.624
Sightseeing and photography	9.023	66.535	-	-	-	0.913	-	0.853
Closing to nature	8.397	74.932	-	-	-	-	0.915	0.891
Characteristic values			1.663	1.459	1.305	1.202	1.114	

As can be seen from Table 4, the cumulative variance explanation rate of five common factors is 74.932%, and load capacity of each factor is more than 0.5, which shows that these factors can well reflect initial variance of each factor. Common factor 1 is the largest factor that explains 30.918% variance variables and dominates three variables of traditional outdoor sports, group activities as well relaxation. Traditional outdoor sports and relaxation activities can make people feel relaxed, gradually leave traditional stadiums for wilderness, indulge in landscape and fully enjoy pleasure of outdoor exercise; in addition, country parks are also good places for people to communicate, and group activities can be seen everywhere in parks, such as dancing, doing tai chi and kicking shuttlecock. People can keep fit and strengthen emotion ties as well. Common factor 2 dominates two types of preference activities of land-based leisure and water activity, whose explanatory variance is 15.999%.

Main motivations of recreationists for country parks are to enjoy harmony and tranquility of nature, because people have a natural tendency to water and forest. The two preference activities in country parks are very popular with people, because these two activities are beneficial for the realization of their recreational motivations. The result is also consistent with previous conclusion of recreational space preference. Orienteering activities and child's games are dominated by common factor 3, which explains 10.594% variance. Safety is the first demand of recreationists for activities and projects, and some people may worry that orienteering activities are not very safe. Furthermore, orienteering activities can bring feeling of stimulation and novelty to recreationists, however, people's recognition for such activities is still quite low; for child games, this study focused on activities that children preferred, such as dredging and swing, however there are not such exercises in some country parks because primary functions of the parks are not these projects, which also affects people's preferences. Sightseeing and photography as well as being close to nature as the common factor 4 and common factor 5 respectively, explanatory variance rate of them is 9.023% and 8.397%.

Country parks should provide convenient conditions in facilities and projects for leisure and fitness activities to make recreationists get better recreational experience. Country parks should focus on original status of nature, however, actual situation is that artificial landscapes are quite noticeable. To some extent, this can't give people pleasant scenery, therefore, and it also can't meet people's demands for sightseeing and photography. According to our field investigation, artificial marks in country parks' were

obvious in Beijing, landscape design was excessively artificialized, the parks lacked wilderness that they should possess. All these made people lose the chance to close to nature, correspondingly, the two types of recreation activities are the lowest preference among activities for recreationists.

### **Discussion and Conclusion**

In this study, respondent's gender was evenly distributed; in terms of age, recreationists were mostly young people; recreationists had fairly high level of education; for occupation, these people were mostly company staff; private cars were primary ways for outgoing; families with children (young couples with children) were a major type of recreational group, people tended to group travel; for time radius, the majority of people could reach to country parks within 30 minutes, more than half of recreationists went to country parks for the first time; for the choice of recreation places due to limited time, most people chose to come to country parks on weekends instead of city parks. At the same time, country parks were on the top in the list of recreationists' tour destination, which reflected that country parks had more attraction than city parks.

According to the results of Factor Analysis, common factor 1 was the largest factor, dominating traditional outdoor sports, group activities and relaxed activities, The three activities were major preference activities for recreationists. From the perspective of recreationists' characteristics, people who came to country parks with their friends accounted for a large proportion. Therefore, some fitness and group activities projects, such as kicking shuttlecock in forest, riding a bike and crossing should be designed. Compared with city parks, country parks have larger recreational spaces, which make country parks can provide places for some recreational projects that are suitable for fitness and group activities. In this way, country parks can build their own brand and elevate its influence. The above mentioned projects and facilities should be included in planning and design of country parks, giving full play to recreational functions of the parks.

Land-based relaxation activities dominated by common factor 2 were also popular with people. Through field survey as well as interview, we knew that many people barbecued and camped in parks on weekends or holidays, these projects should be arranged as many as possible in country parks. The needs for camping should also be considered in the process of setting up of forest land. Private cars were primary ways to travel for people. For that reason, car camp should be built. For barbecuing,

recreationists' barbecuing without supervision, would bring potential safe hazard both to parks and other people. Recreationalists believed that "security", "environmental facilities", "pricing" and "service" were the most important aspects of recreation around urban area (Wu et al., 2007). Governors of country parks should allocate special area for barbecuing and also can provide leasing services including leasing grill facilities and other items.

Families with children had a higher preference for children's playground and other similar places, children liked playing in these places with various recreation facilities, parents stayed here for a long time to look after their children (Tao et al., 2016). Common factor 3 predominated orienteering activities and child games. The survey showed that families with children were for the main recreational group types. The young couples with teenagers accounted for the most proportion. It is a significant motivation for individuals to improve emotion with their families and friends, so for the recreational groups, parent-child recreation activities are good choices, such as child game (sand-excavating, swing), water activities (boating) and closing to nature activities (picking, forest crossing), and other items that can make people close to nature and promote emotion exchange among family members. The setting places of projects should be mainly focused on water areas, edge of waters and woodlands. For orienteering activities, people had low preference for these activities because of security worries. Taking security factor into consideration, combining the result of Factor Analysis, we should avoid these activities when building and planning the country parks.

According to analysis results, the two preference types of sightseeing and photography as well as closing to nature respectively dominated by common factor 4 and common factor 5 were the lowest preference among people. With the increase of recreation activities in suburbs, people had higher requirements on the surrounding recreational environment (Sun & Feng, 2013). The construction of most country parks in Beijing were highly urbanized, artificial and overly designed, and artificial landscapes can be seen almost everywhere, which seriously affected recreationists' vision. Wilderness and nature that country parks should possess had been destroyed, which made people have few chances to close to nature. For residents who lived in crowded urban areas for a long time, their demands were different between recreational objects of suburbs and recreational objects of urban districts. In general, compared with humanity types (such as theme parks, historical sites and religious places, etc.), urban residents preferred resource types (such as forest and mountain, lake and waterfront and rural

fields, etc.) (Jiang et al., 2011). As an important part of recreational areas, country park is a good place for people to relax, the recreational projects should be designed to satisfy people's preferences. Therefore, the work of cultivating wilderness should be focused while planning and building country parks, and more places of communication, rest and closing to nature for recreationists should be provided. Country parks should not only improve ecological environment for cities, but also provide surrounding residents with good places for their outdoor recreation.

The construction of country parks in Beijing is changing patterns of urban relaxation, and citizens tend to choose country parks as destination for their recreation on weekends or holidays. Country parks have advantages of their suitable location, large area and beautiful landscape. Therefore, country parks should give full play to its own advantages, develop recreation projects with their own characteristics referring to the information on recreationists' characteristics, motivations and preferences provided by the study. For instance, the Changying Park can carry on kicking shuttlecock games, the Dongxiaokou Park can set up bicycle roads in its large woodland. These activities can make people close to nature in sports, the Dongba Park can attract people to do activities of picking, provide related facilities and instruction for recreationists. Developing these special projects can enrich recreational choices for people, improve the popularity and influence of country parks and give full play to their recreational functions.

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**Appendix 1: A questionnaire about recreation preferences of recreationists of country parks in Beijing**

Hello, we are members of research group of the Natural Science Foundation of Beijing, we are making an investigation on recreational behaviors and preferences. We hope to receive your support, you only need to spend a few minutes, and the findings are confidential. Thank you very much.

1. What kind of transportation do you usually use to arrive here?

(A) walk (B) bicycle (C) electrocar (D) bus (E) private car (F) taxi

2. How long do you need to come here?

(A) within 10 minutes (B) 10 to 20 minutes (C) 20 to 30 minutes

(D) 0.5 to 1 hour (E) 1 to 2 hours (F) 2 hours

3. What type of your travel group is it ?

(A) families with children (B) families without children (C) friends

(D) unit collective (E) school collective (F) oneself

4. How many people come here with you?

(A) none (B) one (C) two (D) three (E) four (F) five (G) more than five people

5. How many times have you come here in the past three months? For ( ) times.

6 .What do your favorite among the following facilities of parks?

(A) Leisure and culture square (B) Viewing platform (C) Teahouse in forest

(D) Square of exercise and fitness (E) Game square on tree-lined boulevards

(F) Water's edge (G) square of roller skating

7. Please describe preference for the following recreation projects.

(1-Not at all preferred, 2-Not very, 3-Average, 4-Appreciated, 5-Much preferred)

Sightseeing and photography	1	2	3	4	5
Relaxation (walking, walking the dog, breathing technique)	1	2	3	4	5
Traditional outdoor sports (ball games, exercise with equipment)	1	2	3	4	5
Group activities (dancing, kicking the shuttlecock)	1	2	3	4	5
Land-based leisure activities (picnic, camping, barbecuing, flying a kite)	1	2	3	4	5

Water activities (boating, fishing, swimming)	1	2	3	4	5
Children`game (sand-excavating, swing)	1	2	3	4	5
To be close to nature (picking, forest crossing)	1	2	3	4	5
Orienteering activities (rock climbing, skateboard, orienteering)	1	2	3	4	5

8. Please choose recreational destination during the following leisure time (Mark with"√")

Holidays	Ordinary days	Weekends	Three days off	Golden week
Country park				
City park				
Outer suburbs				

9. Gender:

(A) male (B) female

10. Age:

(A) Under 6 (B) 7 to 17 (C) 18 to 28 (D) 29 to 44

(E) 45 to 59 (F) 60 to 74 (G) Above 75

11. Occupation:

(A) Company employee (B) Staff of government institution (C)Retiree (D) Teacher

(E) Student (F) Individual entrepreneur or boss (G) Housewife (H) Others

12. Education level:

(A) Junior high school and below (B) High school or technical secondary

(C) Junior College (D) Undergraduate course (E) Master degree and above

13. In general, do you satisfied with the outing?

(A) Very dissatisfied (B) Dissatisfied (C) Satisfied

(D) Quite satisfactory (E) Very satisfied