

## Leisure Behavior of Characteristics by The Elderly At Parks In Osaka, Japan

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### Abstract

This paper try to provide basic insight of the changing functions of urban parks for the future direction of the maintenance and management of the urban parks using the results of the case study done for the city of Osaka, Japan. To accomplish this purpose this study considers the behavior characteristics of the elderly within the parks in Osaka, Japan. Based on the findings of the study authors propose the chaining meaning of urban parks in the users perspective and summarize the results of the study. Study results show high values on the environmental factors of the park, such as the fresh air and the shadow of trees and low values on noise and stairways in it. The multidimensional quantitative III classifies the purposes of the elderly using the parks into 3 types: a multi-use type, a walking type and a sightseeing type.

*Keywords: Osaka Prefecture, Park, Leisure Behavior, The elderly, multidimensional quantitative III*

### 1. INTRODUCTION

One of the urban problems caused by the urbanization and new information technology (i.e., Internet) is the loss of the unique characteristics of a certain place. Since every urban spatial component is perceived as a complex system consisting of physical environments, social systems, economic systems of resources, technology, and tradition of markets and ownership, it is a unique identity called place. Here, the place is a combination of space, time, and purpose through perceptual and functional experience of it. Any component is open to change, and such changes will affect the balance of the system and other components in it. Thus, changes in conditions, such as prohibitions or liberties in law, may influence the identity of a place. One example may be changes in the social function of the urban park, which does not mean physical changes in architecture but causes a certain change in the identity of the place. Parks with abundant green space do not only provide diverse social and leisure opportunities to users but also contribute to enhancing the amenity of the city. Thus, it seems reasonable to consider that the increasing demand for the parks or green open space within the cities reflects the changing life style and preference to the place. For instance, as the cities grows the traditional functions of parks within a city, such as green space for jogging, socializing, and meeting with neighbors, were begun to changed by the various factors. Leisure is a most important element of those factors, especially for the elderly who spend almost all day long in the parks. That is, parks in the city area appeal to the elderly as free open space with abundant green and convenient amenities for their daily lives For this perspective, the park is an important space in their daily life because there are a lot of the elderly who spend their spare time in the park. Especially in Korea, large share of the users of small parks within the cities are the elderly (so called as "Elderly-crowded Parks"). For this reason, it is required for both planners and public adminis-

trators to have clear understanding about the changing functions of urban parks and planning strategies which enable to enhance the performance of the parks as open space and leisure space for the elderly.

Likewise, because the park plays an important part in the elderly life in Korea, it is required to examine the actual usage of the elderly and the environmental maintenance for their leisure activities at the parks. In Japan, research on the life style of the elderly and the facility structures of the park, the conditions preferred in the outdoor such as the waterfront as well has largely been explored (Hayashi, 1986; Kamiyama, Wakayama and Kitahara, 1994). For example, Hayashi (1986) investigated the life style of the elderly and their actual usage of the area park, neighboring parks, children parks on a park scale. It is meaningful to compare the behavioral characteristics of the elderly in the two countries (Korea and Japan) in terms of their usage of the park. Hayashi's study results indicated that the elderly in Japan do not use parks so many as the elderly in Korea do. The results could be stemmed from different cultures and social backgrounds in both countries.

This paper try to provide basic insight of the changing functions of urban parks for the future direction of the maintenance and management of the urban parks using the results of the case study done for the city of Osaka, Japan. To accomplish this purpose this study considers the behavior characteristics of the elderly within the parks in Osaka, Japan. Based on the findings of the study, the author proposes the changing meaning of urban parks from the users perspective and some implications for Korean parks.

### 2. METHODS

#### (1) A Profile of Parks

Through the interview with the authority who takes charge of the elderly welfare section in Osaka Prefecture, the parks which are heavily used by the elderly are se-

lected for this study. Osakazo Park is located in the central part of the downtown and is one of the tourist visiting spots. Tennozi Park is located in the residential and commercial area. Hatoriokuchi Park which includes the cultural assets is surrounded by a residential area. In each park, because the elderly are not distributed in the whole area and tend to gather to a few particular places in the park the places where the gathering is formed were searched and found as a preliminary step towards the investigation. The outlines of the parks are shown in Table 1 and Fig. 1.

Table 1. A Profile of parks

Item	Osakazo	Tennozi	Hatoriokuchi
Area	103.0ha	27.5ha	103.0ha
Location (city)	Osaka	Osaka	Toyonaka, Suita
Access to park	Subway, bus, Train	Subway, bus, Train	Subway, Bus
Geographic characteristic	Plain ground	Hill	Hill
Specified term of park	1931	1908	1951
Main facilities	Museum, Parking	Tower, Zoo, Art museum	Flower bed, Stand, Parking
Main characteristics	Tourist park	Museum, Public Music Activities.	Recreation, Exercise.
Land Uses of the Vicinity	Commercial, Residential, Industrial	Commercial, Residential	Commercial, Residential
Fee	Free	Charge*	Free

\*Senior citizen over 65 years old is free according to the respect for the elderly system

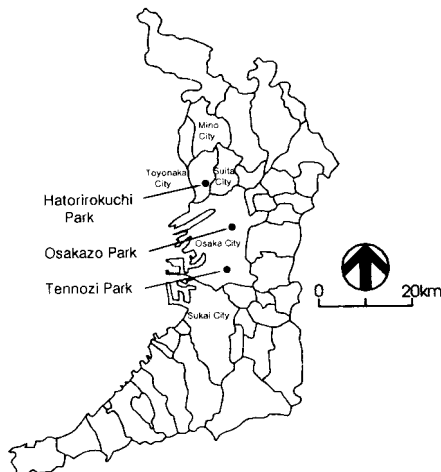


Fig. 1. Locations of parks

## (1) Survey Methods

### 1) Behavior Observation<sup>1</sup>

All kinds of behavior observed were recorded and classified in Table 2. The behavior observations were

<sup>1</sup> A spatial movement like a passage has been excluded in the behavior observation of the research, in order to focus on the normality of the elderly behaviors in observation time.

done nine times in each day for one hour between 9:00A.M. to 5:00P.M. The observations were conducted on every Fridays and Sundays from October 3rd to 24th in 1997. In the observations the usage of park, the number of persons, and kinds of behavior were recorded. The total kinds of the behavior amount to 20 types according to acts and postures as shown in Table 2. Before comparing the use behavior of each park, the kind of the behavior was simplified into six<sup>2</sup> (Table 3).

### 2) User Interview

The outlines of user interviews are shown in Table 4.

Table 2. Behavior Classification

1. Eating	2. Drinking	3. Watching	4. Reading
5. Smoking cigarettes	6. Talking between two persons		
7. Talking among over three persons			
8. Sitting	9. Playing badminton	10. Playing balls	
11. Jogging	12. Taking physical exercises		
13. Strolling	14. Using a stall	15. Using vending machines	
16. Taking a photograph	17. Drawing a picture		
18. Singing	19. Listening to music	20. Riding a bicycle	

Table 3. Behavior Classification(Grouping the behaviors into 6types)

Behavior	Behavior Mapping Code
1. Taking a rest	1 ~ 5, 8, 19
2. Communicating	6, 7
3. Taking excises	9 ~ 13
4. Purchasing	14, 15
5. Doing hobby activities	16 ~ 18
6. Riding a bicycle	20

Table 4. A Summary of User Interview

Main Investigation	Content
Investigated Parks	Osakazo Park, Tennozi Park, Hatoriokuchi Park
Person for investigation	The elderly who are visiting the above parks
Study method	Interviews
Method of extracting samples	Randomized in the place where the gathering is formed in the parks
Sample size	180 persons (60 person in each park)
Observation days	October 3rd through 24th on Sundays and Fridays, 1997
Research items	Individual attributes, Frequency of visit and reasons for coming parks

Interviewees were randomly selected in the places where the elderly got together in each park.

The interviews were conducted from 9:00A.M. to 5:00P.M.

<sup>2</sup> Behaviors of human beings depend on space and time. For this reason, it is necessary to observe and record who is doing what kinds of behaviors. To accomplish the purpose of this research, the behavior patterns of each park are compared and similar behaviors are classified.

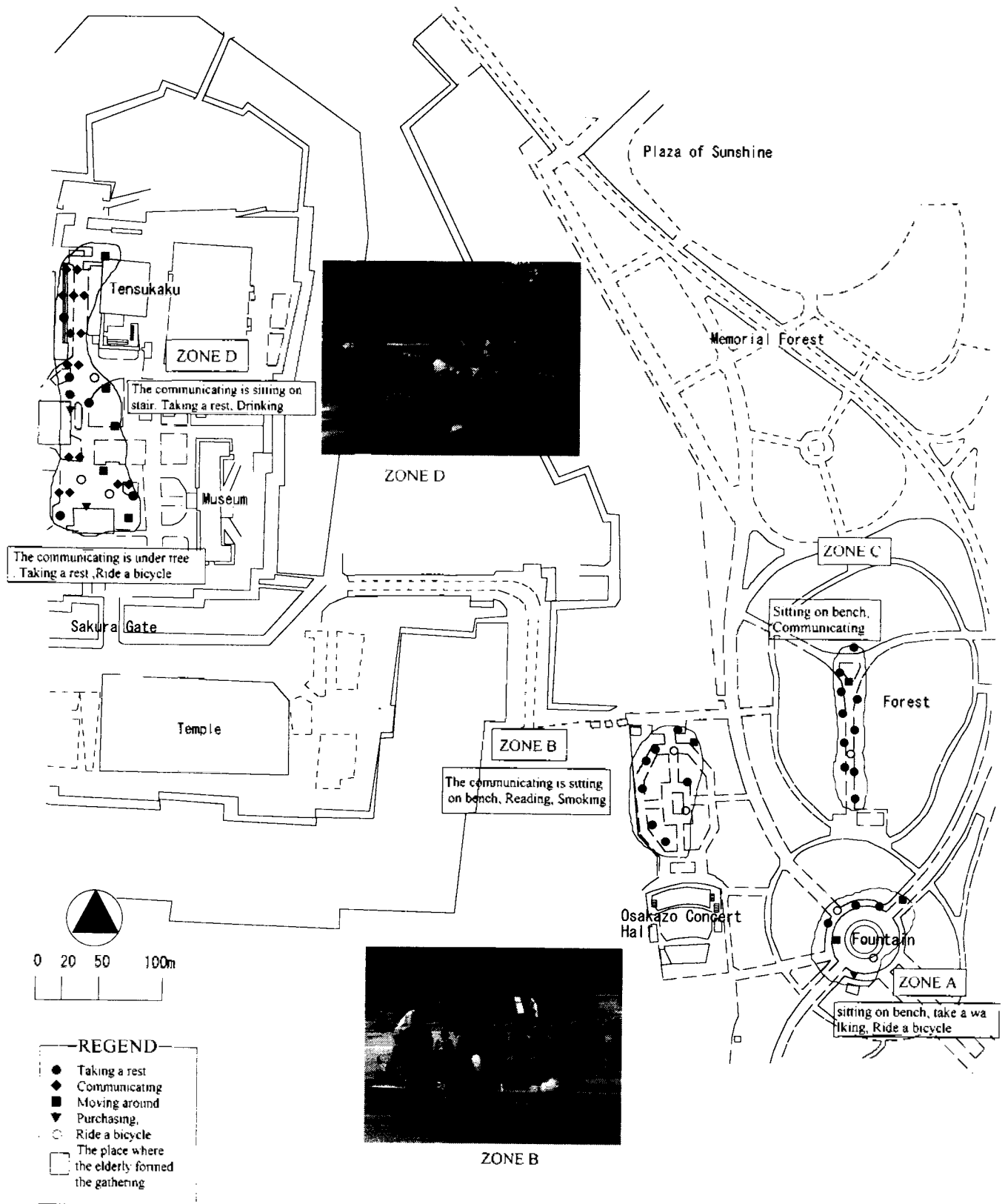


Fig.2. Actual use condition in Osakazo park.

The main questions were individual attributes, the degree of usage and reasons for coming to the park.

### 3. USAGE OF PARKS

#### (1) Behavior Patterns

Observed behaviors at the parks were plotted through the behavior mapping. The contents of the behavior in the different zone of each park is described on the behavior map (Fig. 2). Behaviors observed in the Osakazo Park characterize sitting, reading, smoking, lying, and so on. In the zone A where the jogging course is provided, lots of exercises by the elderly was observed. In the Zone D, many tourists were found due to widely-known features of Tensukaku in the Osakazo park. In the Zone A of Tennozi park, the elderly take rests on benches for a relatively longer time, while the elderly take short rests in the zone B. One possible reason for the difference in their behavior patterns is the large shade of trees on benches. The Hatoriokuchi park shows similar patterns in behaviors of the elderly such as walking, resting, and chattering. Chattering between two or among three elderly people was frequently observed in the zone B and C, respectively, while the elderly use facilities for taking rests and having drinks around the facilities in the zone C. Additionally, in the zone B of the Hatoriokuchi park, elderly people's taking pictures in the garden were frequently found in holidays. In sum, a lot of elderly were found near the benches, trees, entrance of the parks, and in quite and solitary places within the parks.

#### (2) Temporal Changes in the Number of the Elderly

Data for the park observation, zone, time, and behavior on holidays are shown in Fig. 3.

In the Hatoriokuchi park, number of users was great in normal days rather than holidays and the pick time of the daily and weekend uses was in the early morning. Although people who take a picture in a garden were greater in holidays comparing to the number of users in normal days the other behavior characteristics were not looked different between the normal days and holidays.

In the Osakazo park, number of users was great in normal days rather than holidays and the pick time for the park uses was found in the morning and afternoon. This result implies that the morning users' behavior pattern was not same as that of the afternoon users'. For instance, in the zone C of the Osakazo park number of the park users were began to increase from 12:00 and then reached at the pick 2 to 3 P.M. However, in the Tennozi park, number of users was great in holidays rather than normal days. No pick time was found during the normal days but the pick time for the park use was found at the 3 P.M. during the holidays. One possible reason caused this result might be the fact that the number of long distance users from the outside of Osaka were great in the weekends rather than the normal days.

### (3) Users' Characteristics

#### 1) Users' Characteristics

The majority of visitors to the parks were male. There was no difference in the age distribution of visitors of the

parks. Visitors between 70 and 79 years old were the major user group observed in each park. One possible reason for the smaller number of visitors below 65 years old in the Tennozi park might be the free of charge for the entrance for people over 65. For users' residence areas, over a half of the total elderly visiting the Hatoriokuchi park were revealed to live around the park, while most of the visitors to the Tennozi park were found to live in downtown and elsewhere.

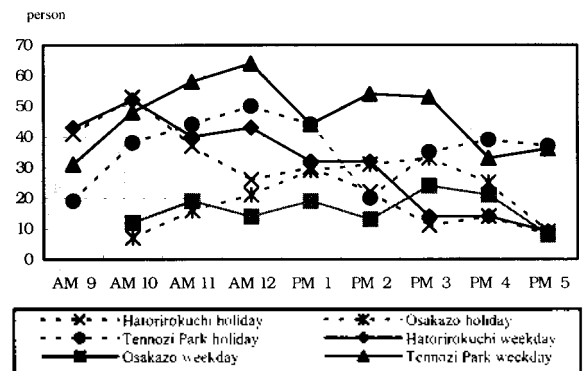


Fig. 3. The number of users of the park of Osaka

#### 2) Frequency of Park Uses

Fig. 4 shows the frequency of park uses. In case of the Hatoriokuchi park, people who use the park daily were quite enough while visitors, who use the park "one or two times in a week" and "two or three times in a month" were large in the case of the Tennozi park. In both cases, visitors used to spend less than two hours within the parks.

#### 3) Reasons of Coming to Park

Fig. 5 shows the reason for visiting the park. According to the Fig. 5, most users seem to visit the parks for "good natural environmental", "taking a walk", "rest" while number of users to visit the park for "having a conversation with other elderly" were quit small.

#### (4) Evaluation of Park Environment

##### 1) Strengths and Weaknesses

The results of the evaluation of the park environment show that "good maintenance of the trees" was considered as a strength of the parks and "trash" and "steep stairway" as weaknesses of the parks. In addition, it was found that there were some differences in answers to the sub-questions.

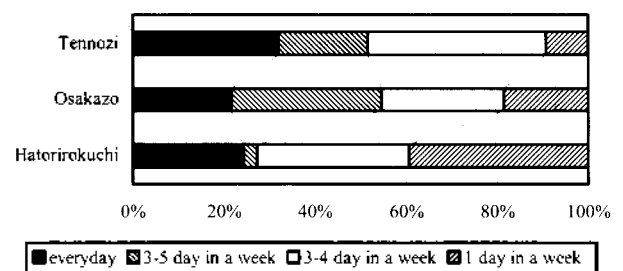


Fig. 4. Use Frequency

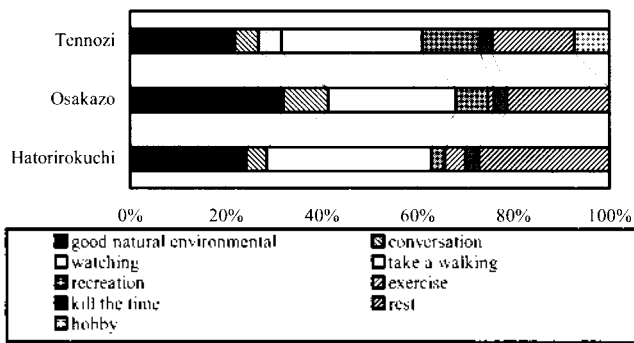


Figure 5. Reasons of coming to park

2) Satisfaction for the Evaluation Items

Evaluation items for each park's environment were derived from the related previous studies. Total 15 items were selected, and each item was rated on a 5-point Likert scale as shown in Fig. 6. The results show that the users put high values on "degree of noise" and "fresh air," while items for "shade of tree" and "availability of bench" were not satisfactory. In addition, things related to the communication, such as "degree of congestion", "walking place", and "communication place", things related to the features of the parks, such as "appearance sculpture" and "appearance information plat" were rated as low satisfaction by the users. (Fig. 6)

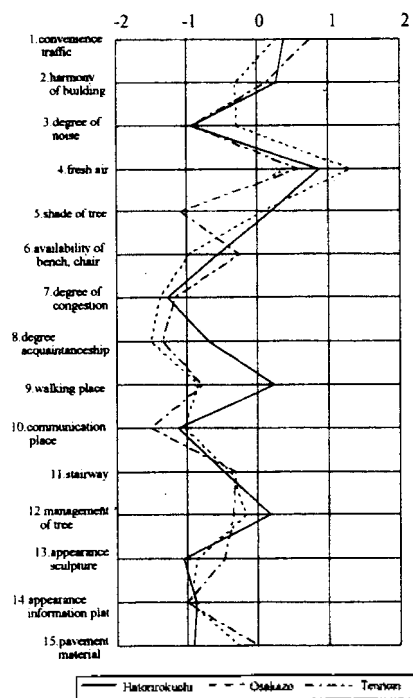


Figure 6. Degree of satisfaction

(5) Analysis of the Use-Tendency based on the Reasons for Coming to the Parks

Reasons for coming to the park are clarified in regard to the eight items and using multidimensional quantitative III.

Category distribution score (Table3) is showing that the +side of axis I to be the category of taking a rest the -side to be of moving around, communication category. The I axis is named as active-passive axis. The -side of axis II relates rest, communicating -side relates hobby activity category. The axis II is named as dynamic-static axis. The +side of axisIII relates picnic, watching, -side relates hobby activity, moving around category. The axisIII is named as daily life-not daily life axis.

The cluster was analyzed based on the score of the sample obtained from the multidimensional quantitative III and three groups of elderly are classified(Fig.7,8).

Group 1 can be classified as "a multi-use type". Average time to arrive the parks is less than 30 minutes. Many people in this group use the park for daily use. Many of the park users indicated that the main reasons for visiting the park are for enjoying the nature, taking a walk, and taking a rest.

Group 2 can be classified as "a walking type". This group aged from 70 to 79, who live at the districts which include parks nearby. They used the park more than 10 years, and about 61% of the people live within 30 minutes to one hour to arrive the park. About the 44% of the users live less than an hour in the park. Main reason for coming to the park is for taking a walk.

Group 3 can be classified as "a sightseeing type". Visitors from other districts spend less than three hours within the parks, and 54% of the total users visit the parks one or two times a month. The main reason for coming to the park is for sightseeing.

Table 3. Category distribution

Item	I axis	II axis	III axis
Good natural environment	-0.7554	-0.0645	-0.4354
Communicating	-1.6352	1.2296	0.8422
Moving around	0.9914	0.8714	1.6649
Taking a walking	0.6521	-0.2520	-0.4131
Picnic	0.3299	-1.3117	2.3744
Exercising	-1.9229	-1.0982	-1.2842
Killing time	1.6548	-0.8150	-0.4858
Resting	0.7242	2.2558	0.0665
Doing hobby activities	0.8520	-0.4820	-1.3560
Eigen value	0.579	0.609	0.396
Raito of cumulative contribution (%)	19%	39%	52%

4. CONCLUSIONS

This paper examines the actual park usage of the elderly at the parks in Osaka, Japan based on the observation of the behavioral patterns of visitors to parks. The following conclusions were drawn:

(1)The behaviors of the elderly can be classified as 6 types, namely, taking a rest, communicating (social exchange), moving around, purchasing, doing hobby

activity and riding a bicycle.

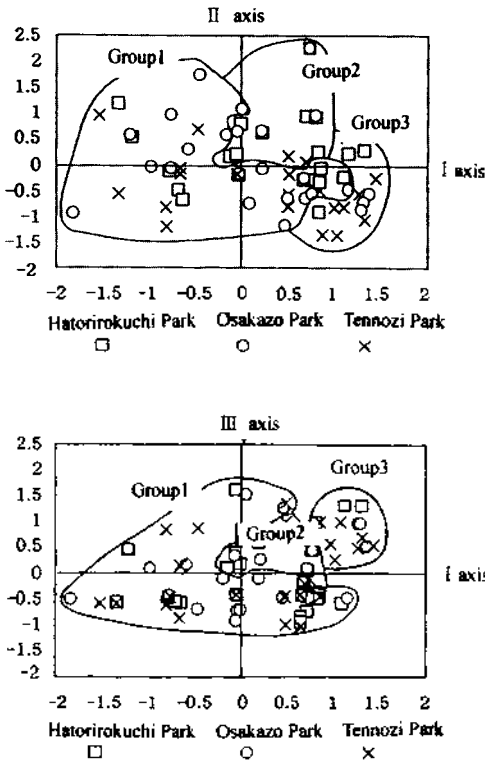


Figure 7. Analysis based on the score of the sample

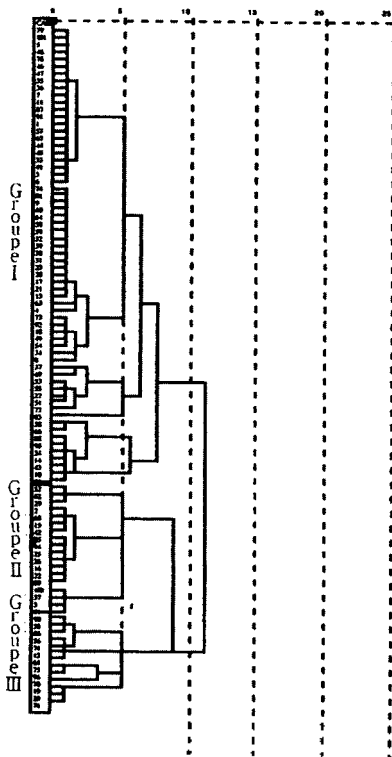


Figure 8. Analysis based on the score of the sample Group

residential area was crowded on holidays.

From the frequency of visits and the time spent in the park, it can be perceived as the place for daily activities of the elderly.

(3) From the environmental evaluation of the park, the fresh air and the shade of trees are highly valued, while the noise and the stairways are low valued.

(4) According to the multidimensional quantitative analyzing purposes of elderly people's coming to the parks, they can be classified as 3 types: a multi-use type, a walking type and a sightseeing type.

(5) Each park has in common that the elderly are gathered near benches and trees, in the quiet and solitary place, and around the entrance of the park.

(6) The majority of the visitors to each park seem to focus on doing personalized hobby activities and physical exercise. Consequently, the parks in Osaka tend to provide the elderly limited functions, and visitors have a relatively definite usage of the parks.

The implication of this study may be a good reference for maintenance of the parks in Korea. This study proposes the following:

(1) While the Korea park is perceived as the elderly-crowded Park, parks in Osaka, Japan are used for a variety of purposes for the elderly' walking for health, playing gate balls, leisure activities, and so on. Likewise, the park needs to be carefully planned for its facilities and maintenance, so that the elderly use it for various behaviors.

(2) The safety issue of the park is an important issue for the elderly to use it comfortably. The maintenance of the sidewalk must be kept for the elderly not to slip easily in their movement. Besides, the stairways must be removed and flat. Non-slippery materials must be considered for the lane at parks.

(3) The parks must function as a resting place for the elderly who are tired. In order for them to feel comfortable, it is desirable to combine the shade of the trees, benches, and wisteria trellis.

(4) It is hoped that the elderly do the maintenance of the park and control the flowers in it. It is also good to give opportunities to the elderly teach children how to play and some knowledge of the nature. Therefore, participating in the park maintenance may enable the elderly to expand their activities at parks.

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(2) The park near the residential area was crowded during the weekdays, while the park quite far from the r

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