

An Analysis of Visitor's Satisfaction and Preference Factors in Private Arboretum - The Case of Gyeonggi-do -

Chang, Yong-Soon* · Lee, Shin-Yeong* · Hong, Kwang-Pyo** · You, Ju-Han**

*Dept. of Landscape Architecture, Graduate School of Dongguk University

**Dept. of Landscape Architecture, Dongguk University

ABSTRACT

This paper researches, by looking into visitors of the Garden of Morning Calm, Pyunggang Botanical Garden, Jangheung Natural Arboretum and the Garden of Wild Flower, how they use these arboretums and what are the facilities they like most to provide directions in formation and planning of domestic private arboretums. The followings are executive summary of this research.

It was researched that most of the them visited arboretums for emotional life (42.93%). They answered that the major reason that they go to arboretums is rest and service functions (42.97%). Such number suggest arboretums that they should provide, along with their original purpose of biological preservation, practical purposes, including rest and service functions.

When asked facilities they preferred most, most visitors answered that they are most satisfied with facilities like restaurants and cafeterias. Information desk, management office, forest museum, wild life zoo, green house, exhibition room, rest area, pond and fountains influenced the visitor satisfaction level as well. Regarding to facility references, visitors most preferred information desk, management office, restaurant and cafeteria.

Key Words: Facility, Rest, Function, Construction

1. Introduction

Although industrialization and development of civilization have made human life much easier and comfort, there have been such side effects as damage of natural environment. And as natural environment grew father apart from human life, people increasingly want more of green (Jin *et al.*, 2001). At the same time, economic development brought change of values and their rather seek richness in mind peace than material richness. As people want to spend more time in green environment, it is becoming more important to preserve natural environment (Kim *et al.*, 1994). In a recent survey, more than 80% respondents said that they agree to expansion of arboretum formation plan (Korea Forest Service, 2007). As

one can see, the major reasons for the recent increase in creating arboretum are that they want to spend more time in green area and more interested in health and emotional cultivation.

「Law of Arboretum Creation and Promotion」 defines that 'arboretums collect, proliferate, preserve, maintain and exhibit plant genetic resources, -carry out academic or industrial research to utilize such resources, -is equipped such facilities required for proliferation and cultivation of plant genetic resources, facilities for managing plant genetic resources based on standards provided by a departmental ordinance of Ministry for Food, Agriculture, Forestry and Fisheries, is equipped with facilities to exhibit plant genetic resources designated by a departmental ordinance of Ministry for Food, Agriculture,

Corresponding author: Kwang-Pyo Hong, Dept. of Landscape Architecture, Dongguk University, Gyeongju 780-714, Korea, Tel.: +82-54-770-2231, E-mail: hkp@dongguk.ac.kr

Forestry and Fisheries, is equipped with facilities to maintain and manage arboretums, put effort to preserve nationally important plant generic resources and transform them into resources to help improve quality of people and development of national economy'. In other words, the purpose behind creating and forming of arboretums is to educate natural environment and for comprehensives research on useful plant resources (Jeon *et al.*, 1991). Recently, however, what people expect from arboretums are quite different from the past. The monitoring of public arboretums between 2005 and 2007 revealed that the purpose of visiting arboretum was radically changed from 'watching plants' to 'rest, recuperation and walking in forests' (Korea National Arboretum, 2008). And other researched on how they use arboretums and how much they are satisfied, it was also found that along with learning national environment and education, they used arboretums for recreational purposed such as rest and walks (Kim *et al.*, 1999; Lim *et al.*, 2005). Therefore, existing arboretums or arboretums to be created should add what the visitors want, along with satisfying their original purposes.

There have been manu researched until recently, on how visitors used and how much they are satisfied with public arboretums. They include Usage status of Chungnam Keumgang arboretums (Baek *et al.*, 2003), How visitors use and satisfied with public arboretums (Lim *et al.*, 2005), Satisfaction assesment on Dae-A arboretums (Hong *et al.*, 2007), Motivation for visit and satisfaction level of visitors of public arboretums (Lim *et al.*, 2008), Satisfaction assesment of national and public arboretums (Kwon *et al.*, 2009), Usage of arboretums and parks of Daegu (Jeong *et al.*, 2009), Usage assesment of Daejeon Hanbatt arboretum, Sanraeso (Kim *et al.*, 2010) and Satisfaction of arboretums visitors and its relation to revisiting (Hong *et al.*, 2010). However, there are not many researches on private arboretums. They are Trend of domestic private arboretums (Kim *et al.*, 2005) and Satisfaction level and capacity assumption of the garden of morning calm (Park *et al.*, 2009). The simple comparison of number of researches on private and public arboretums says that there has not been enough researched on satisfaction level and preference of private arboretums.

Therefore, this research aims to recognize how visitors use the Garden of Morning Calm, Jangheung Natural Arboretum, Pyunggang Botanical Garden and the Garden of Wild Flower and how much they satisfied with them to provide funda-

mental direction in creating and developing Korea's private arboretums.

II. Research Methods

This research focused on, among many, arboretums located in Gyeonggi-do and on arboretums that have attractions or cultural legacies around them, the Garden of Morning Calm has Chungpyoung Lake and Chukryoung Mountain Natural Forest, and Pocheon Pyunggang Botanical Garden has Pocheon Art Vally and Sanjeong Lake, Yangju Jangheung Natural Arboretum has Changheung Art Park and Chungam Folk Museum while the Garden of Wild Flower in Yangpyoung has Yangpyoung Resort.

This research was carried out between 5th September 2010 to 28th November 2010, surveyed visitors to selected arboretums, took 205 questionnaires into consideration out of 213 dropping 8 questionnaire for their insufficiency and employed Likert scales; 5: Very Satisfied, 4: Satisfied, 3: Not Bad, 2: Unsatisfied, 1: Very Unsatisfied. Frequency analysis was carried out to understand visitors behavior and visiting frequency, descriptive method was employed to find out preference of facilities of arboretums, importance of satisfaction level and their order and multiple regression was performed to know how such facilities influence satisfaction level and preference. Such statistical analysis was done with Windows SPSS Ver 17.0 (SPSS Inc, 2010).

III. Results and Discussions

1. Analysis on Selected Research Sites

Three of selected sites were created no later than 4 years and admission fees were between 4,000 and 6,000 won. Most of them are formed in mountains, while the Garden of Wild-Flower in Yangpyoung is a complex format with a river runs in it. For visitors' experience and education purpose, they provide explanation on plants and seasonal exhibitions. And these arboretums were providing educational programs for students as well (Refer to Table 1).

2. Survey Analysis

1) Visitor Attribute

Table 1. Current status on selected sites

	The Garden of Morning Calm	Pyunggang Botanical Garden	Jangheung Natural Arboretum	The Garden of Wild Flower
Established	1980s	1990s	2000s	2000s
Operation (year)	Less than 4	4~10	Less than 4	Less than 4
Admission (won)	4,000~8,000	4,000~6,000	4,000~6,000	4,000~6,000
Annual visitors	650,000	90,000	50,000	50,000
Format	Mountain	Mountain	Mountain	Complex
Area (ha)	10.4	32.0	3.2	10.0
Program	- Commentation: Provide forest commentator - Wild flow, national flow, orchid exhibition - Student program	- Commentation: Provide forest commentator - Alpine plants, pteridophytes and camomile exhibition - Green class program	- Seasonal plants exhibition - Student program	- Plant commentation - Student program
In house plants	- Arbor: 820 species - Herb: 3,480 species - Total: 4,300 species	- Arbor: 2,300 species - Herb: 4,900 species - Total: 7,200 species	- Arbor: 1,340 species - Herb: 1,780 species - Total: 3,120 species	- Arbor: 1,020 species - Herb: 1,990 species - Total: 3,010 species

Analysis on 205 visitors, randomly selected, there were slightly more females (56.50%) than males (43.40%). By age wise, those who are in their 40s ranked at the top with 33.66%, followed by 30s with 29.76%. Teenage visitors were recorded quite low (6.38%) which is for that we did not factor in teenage group visitors. In case of people in their 60s, the rate was 2.44% because senior citizens tend not to respond to surveys, 95.12% of visitors were living either in Seoul and Gyeonggi-do. It is because the selected sites, the Garden of Morning Calm, Pyunggang Botanical Garden, Jangheung Natural Arboretum and the Garden of Wild-Flower, are all located in this area which means easy access to those who live in Seoul and Gyeonggi-do. There were not many people visiting those sites from Honam, Chungchung and other areas. When it come of occupation of visitors, 30.73% were housewives, 11.22% office workers and 10.24% were students. The reason that housewives are top of the list is that they often pick the sites for friend-gathering and picnic place of family leisure and housewives are the most active when asked questions for this research (Refer to Table 2).

2) Visitors' Usage Behavior

86.83% of visitors used their own cars to come to the arboretums and this is because, except for the Garden of Wild-Flower, most of the selected arboretum are located in mountains which makes difficult to use bicycles or to walk and there are not many mode of public transportation to these sites. 45.37% said that it took one to two hours to come and 37.56% answered 30 minutes to an hour. This is because that

most visitors are coming from Seoul and Gyeonggi-do.

When asked about the reason for visiting, 42.93% answered for emotional life, while 33.66% said that it is for observing the nature and attending exhibitions. The numbers indicate

Table 2. Visitor attributes

	Items	Rate (%)
Gender	Male	89 (43.40)
	Female	116 (56.60)
Ages	10s	14 (6.83)
	20s	32 (15.61)
	30s	61 (29.76)
	40s	69 (33.66)
	50s	24 (11.71)
	60s~	5 (2.44)
Resident	Seoul and Gyeonggido	195 (95.12)
	Honam	3 (1.46)
	Chungcheung	5 (2.44)
	Youngnam	0 (0.00)
	Others	2 (0.98)
Occupation	Self employed	19 (9.27)
	Office worker	23 (11.22)
	Public servant	9 (4.39)
	Teachers	12 (5.85)
	Service	11 (5.37)
	Labour	18 (8.78)
	Production	18 (8.78)
	Students	21 (10.24)
	Housewives	63 (30.73)
	Others	11 (5.37)

that there are increasing number of people who use arboretums for rest, recuperation and a therapeutic walk in forests. In case of forest lodges, where a similar phenomenon is happening, Ha (2002) indicates that major portion of visitors are there for stational activities like rest and recuperation. This hints us that more facilities for such activities are needed to arboretums and forests lodges.

49.27% of visitors said that they visit arboretums for rest and service. Number is quite high when one considers the original purpose of arboretums, which are collection and preservation of species (37.56%), research (7.32%) and education (5.85%). This indicate us that arboretums should be more able to handle biological functions (species preservation) and practical services like rest, as well.

When asked if they are willing to come back, 88.78% said yes while 11.22% said no. Reasons for not wanting to come back was, among other things, 'there are not many species to watch', 'the arboretum is too far', 'admission fees are too expensive' and 'facilities are not convenient to use.' The research team believes that existing private arboretums and arboretum to be created should be aware of such facts (Refer to Table 3).

3) Satisfaction Level Analysis

Analysis on satisfaction level of arboretum facilities, rest area was top to the list scoring 4.2. Seed reservoir and sample room were 2.72 points which is quite a low mark. We believe that it is because the four arboretums did not have such facilities (Refer to Table 4). In case of Ha (2006), however, the rate of plant classification and species preservation was high and it is because the research was performed on public servants and researchers. In order to maintain biological preservation function, which is one of many functions of arboretums, seed reservoir and sample rooms are very important. Seed reservoir, especially, need to be further created because they can not only maintain a genetic train of plants but also preserve species outside their native locations.

The research team has done test for statistical similarities for satisfaction level of arboretums with 8 independent variable. Experience and educational facilities, seed reservoir, sample rooms, parking lots and water stands are not accounted in this study for their irrelevancy. The statistic value of group F which is relevant to this research and includes forest museums, wild life zoo, green house, exhibition facilities, water places, rest area, information desk, management office, restau-

Table 3. Visitors' usage behavior

	Items	Rate (%)
Mode of transportation	Walk	0 (0,00)
	Bicycles	3 (1,46)
	Bus & taxi	24 (11,71)
	Own cards	178 (86,83)
	etc	0 (0,00)
Time took	Less than 30 min.	14 (6,83)
	30 min.~1 hour	77 (37,56)
	1 hour~2 hour	93 (45,37)
	2 hour~3 hour	19 (9,27)
	4 hour and more	2 (0,98)
Purpose	Academic research	7 (3,41)
	Nature, exhibition	69 (33,66)
	Rest, recuperation	88 (42,93)
	Program, events	5 (2,44)
	Gathering	32 (15,61)
	etc	4 (1,95)
Major function	Collection and preservation	77 (37,56)
	Research	15 (7,32)
	Education	12 (5,85)
	Rest and service	101 (49,27)
	Cooperation	0 (0,00)
Visit again	Yes	182 (88,78)
	No	23 (11,22)

rant and cafeteria, was 31.13 with p -value of 0.00. Independent variable included in the sample explains the visitor satisfaction level about arboretum facilities within significant level of 0.05 and gross change value 56% is explained by independent variable included in the sample (Refer to Table 5). It seems, therefore, such facilities as water place, rest area, information desk, management office, restaurant and cafeteria do affect the satisfaction level of arboretum facilities.

When how independent variables contribute satisfaction level and their statistical significant, those independent variables significantly affecting satisfaction level withing significant level of 0.05 were forest museum, wide life zoo, green house, water places, information desk, rest area, management office, restaurant and cafeteria while in order of restaurant, cafeteria, information desk, management office, forest museum, wild life zoo, green house, rest area and water place influenced satisfaction level when it is considered by standardized coefficients which represent relative contribution of independent variables (Refer to Table 5). People tend to visit

Table 4. Summary statistics of variables

Item	Mean (SD)	Min	Max	N
Experience and educational facility	3.04 (1.17)	1.00	5.00	205
Seed reservoir, sample rooms	2.72 (1.09)	1.00	5.00	205
Forest museum, wildlife zoo, green house, exhibition hall	3.54 (1.01)	1.00	5.00	205
Water place (lake, fountains)	3.65 (0.97)	1.00	5.00	205
Rest area (playground)	4.20 (0.91)	1.00	5.00	205
Information desk, management office	3.60 (0.91)	1.00	5.00	205
Parking lot, toilets, water stands	3.57 (0.94)	1.00	5.00	205
Restaurants (snack bar), cafeteria (tea house)	3.49 (1.19)	1.00	5.00	205
Overall satisfaction level	3.61 (0.85)	1.00	5.00	205

arboretums for recuperation purposes and females tend to visit arboretum more than male because it is believed that female, unlike male, carry out their recuperation activities mostly in restaurants or cafeterias. At the same time, the overall mood and image of private arboretums can be expressed more via convenience facilities like restaurants than via plants themselves, it is important to consider when one thinks of creating an arboretum.

4) Preference Analysis

In the technical statistics on preference, rest area scored top with 4.31 points followed by restaurant and cafeteria with 4.21 average (Refer to Table 6). This tells us that majority of visitors come to arboretum for rest and to enrich their emotional lives.

Experience and educational facilities, seed reservoir, sample rooms, test sites and laboratory, water places, rest area, toilets and water stands are not accounted in this study for their irrelevancy. The statistical value of model F which is including the remaining independent variables is 21.44 with p -value of 0.00 and explaining facility preference with significant level of 0.05 and 49.7% of change value in preference is being explained (Refer to Table 7). In other words, visitors most prefer such facilities as forest museum, wild life zoo, green house, exhibition hall, information desk, management office, restaurant and cafeteria.

When how independent variables contribute preference level and their statistical significant, those independent variables significantly affecting preference level withing significant level of 0.05 were forest museum, wide life zoo, green house, exhibition hall, information desk, management office, restaurant

Table 5. Results of multiple liner regression model

a: Analysis of variance

Source	df	Sum of squares	Mean square	F value	Prob>F
Regression model	8	82.01	10.25	31.13	0.00
Residual	196	64.55	0.33	-	-
Total	204	146.56	-	-	-

b: Results of multiple liner regression analysis

Dep. var.: Overall satisfaction level,

Root MSE: 0.573, Dep. Mean: 3.614, R-square: 0.560, Adj. R-sq.: 0.542

Variable	df	Unstd. coeff.	Std. error	Std. coeff.	t-value	Prob.
Intercept	-	0.35	0.23	0.00	1.52	0.13
Experience and educational facility	1	0.05	0.05	0.06	0.87	0.39
Seed reservoir, sample rooms	1	0.04	0.06	0.05	0.66	0.51
Forest museum, wildlife zoo, green house, exhibition hall	1	0.15	0.06	0.17	2.57	0.01
Water place (lake, fountains)	1	0.11	0.05	0.12	2.02	0.05
Rest area (playground)	1	0.12	0.05	0.13	2.21	0.03
Information desk, management office	1	0.16	0.06	0.18	2.80	0.01
Parking lot, toilets, water stands	1	0.07	0.05	0.08	1.39	0.17
Restaurants (snack bar), cafeteria (tea house)	1	0.22	0.04	0.31	5.72	0.00

Table 6. Technical statistic of preference level of arboretum facilities

Items	Mean (SD)	Min	Max	N
Experience and educational facility	3.44 (1.16)	1.00	5.00	205
Seed reservoir, sample rooms	3.33 (1.11)	1.00	5.00	205
Forest museum, wildlife zoo, green house, exhibition hall	3.53 (0.99)	1.00	5.00	205
Test sites and laboratories	3.03 (1.09)	1.00	5.00	205
Water place (lake, fountains)	3.69 (0.97)	1.00	5.00	205
Rest area (playground)	4.31 (0.89)	1.00	5.00	205
Information desk, management office	3.64 (1.04)	1.00	5.00	205
Parking lot, toilets, water stands	3.51 (1.04)	1.00	5.00	205
Restaurants (snack bar), cafeteria (tea house)	4.21 (0.89)	1.00	5.00	205
Overall satisfaction level	3.90 (0.86)	1.00	5.00	205

Table 7. Results of multiple liner regression model

a: Analysis of variance

Source	df	Sum of squares	Mean square	F Value	Prob>F
Regression model	9	75.63	8.40	21.44	0.00
Residual	195	76.42	0.39	-	-
Total	204	152.05	-	-	-

b: Results of multiple liner regression analysis

Dep. var.: Overall preference level,

Root MSE: 0.626, Dep. Mean: 3.902, R-square: 0.497, Adj. R-sq.: 0.474

Variable	df	Unstd. Coeff.	Std. error	Std. coeff.	t-value	Prob.
Intercept	-	0.48	0.28	0.00	1.73	0.09
Experience and educational facility	1	-0.05	0.05	-0.06	-0.91	0.37
Seed reservoir, sample rooms	1	0.02	0.06	0.03	0.36	0.72
Forest museum, wildlife zoo, green house, exhibition hall	1	0.19	0.06	0.22	3.22	0.00
Test sites and laboratories	1	0.00	0.05	0.00	0.02	0.99
Water place (lake, fountains)	1	0.02	0.06	0.02	0.30	0.76
Rest area (playground)	1	0.12	0.06	0.12	1.84	0.07
Information desk, management office	1	0.23	0.06	0.28	4.23	0.00
Parking lot, toilets, water stands	1	0.10	0.05	0.12	1.92	0.06
Restaurants (snack bar), cafeteria (tea house)	1	0.25	0.06	0.26	4.11	0.00

and cafeteria. Their relative influence to preference level was, in the order of, information desk, management office, restaurant, cafeteria, forest museum, wild life zoo, green house and exhibition hall (Refer to Table 7).

IV. Conclusions

This research has been carried out aiming to provide fundamental data that can be used upon creating private arboretums by looking into behavior of visitors, how much they are satisfied and what they prefer most in arboretums.

Analysis on visitor attributes, the sex ratio of them are 56.5% of female and 43.4% of male. By age wise, 33.66% was 40s and 29.76% was 30s 95,125 of visitors were coming

from Seoul and Gyeonggi-do because the subjects of this research, the Garden of Morning Calm, Pyunggang Botanical Garden, Jangheung Natural Arboretum and the Garden of Wild Flower, are located in such areas. 30.73% of visitors were housewives because most of theos in their 30s and 40s tend to pick arboretum for the site of family and friend gathering.

The reason for 86.83% of visitors were using their own cars to come is subject sites, except for the Garden of Wild-Flower, were located in mountain area. It took, on average, 1 to 2 hours (45.37%) and 30 minutes to 1 hour (37.56%).

42.93% of visitors came for rest and to enrich their emotional life while 33.66% said they come to arboretums to observe nature or exhibitions. As one can see there are increasing number of people using arboretums to rest, recuperation and a therapeutic walk in forests. The ratio of those who come to arboretums for social gathering was 15.61%, which was relative high number, indicates that the visitors conception of arboretum visit is gradually shifting. 49.27% of visitors said the major function of arboretums are rest and service which is quite high ratio when one considers the original purpose of arboretums are species collection and preservation (37.56%), research (7.32%) and education (5.85%). This indicates that arboretums, down the road, should be able to provide visitors biological preservation functions as well as practical functions.

When asked if they are willing to come back, 88.78% said yes while 11.22% said no. Reasons for not wanting to come back was, among other things, 'there are not many species to watch', 'the arboretum is too far', 'admission fees are too expensive' and 'facilities are not convenient to use.' It appears that existing private arboretums and arboretum to be created should be deeply aware of such facts.

Analysis on satisfaction level of arboretum facilities, rest area was top to the list scoring 4.2. Seed reservoir and sample room were 2.72 points which is the lowest. We believe that it is because the four arboretums did not have such facilities.

The statistic value of group *F* which is relevant to this research and includes forest museums, wild life zoo, green house, exhibition facilities, water places, rest area, information desk, management office, restaurant and cafeteria, was 31.13 with *p*-value of 0.00. Independent variable included in the sample explains the visitor satisfaction level about arboretum facilities within significant level of 0.05 and gross change va-

lue 56% is explained by independent variable included in the sample. When how independent variables contribute satisfaction level and their statistical significant, those independent variables significantly affecting satisfaction level withing significant level of 0,05 were forest museum, wide life zoo, green house, water places, information desk, rest area, management office, restaurant and cafeteria while in order of restaurant, cafeteria, information desk, management office, forest museum, wild life zoo, green house, rest area and water place influenced satisfaction level when it is considered by standardized coefficients which represent relative contribution of independent variables.

In the technical statistics on preference, rest area scored top with 4,31 points followed by restaurant and cafeteria with 4,21 average. The least preferred facility was test sites and laboratories (3,03 points) because visitors do not have access to such areas.

Forest museum, wild life zoo, green house, exhibition hall, rest area, information desk, management office, parking lot, toilets, water stand, restaurant and cafeteria were found to be preferred by visitors through distributed analysis on facilities. This is statistically significant with *F*-value of 21,44, *p*-value of 0,00 and significant level of 0,05 and coefficient of determination was 49,7%. Independent variable included in the sample explains the visitor satisfaction level about arboretum facilities within significant level of 0,05 and such facilities as information desk, management office, restaurant and cafeteria, forest museum, wild life zoo, green house and exhibition halls do affect the preference level of arboretum facilities.

This research certainly has it limitation, including the fact that the number of questionnaires were low and the subject of this research was limited to four, to represent the current status of private arboretums in Korea. Therefore, it seems that the number of survey subjects and sites should be further expanded for future researches. When more objective researches, including identifying relations between preference and satisfaction level, addition of assessment indexes and comparison of theme places formed in each arboretums, are performed, it will be a great help in promoting private arboretums.

References

1. Baek, Dong-Ryeul, Yong-Moon Jeong and Jae-Sang Byun(2003) Research on how people use Chungnam Keumgang arboretums and how to promote it. Korea Environment Restoration Green Technology Paper 6(6) : 14-24.
2. Ha, Kyoung-Ryang(2002) Research on usage behavior and awareness on natural forests. Geographic Research 36(3) : 205-216.
3. Ha, Sung-Keun(2006) Importance of Functional Index of Arboretums and Ways to Specialize Them. MS Thesis. University of Kyungpook, Daegu.
4. Hong, Du-Jin(2007) Research on Satisfactory Level of Dae-A Arboretum, MS Thesis. University of Jeonbook, Jeonju.
5. Hong, Sung-Kwon, Jae-Hyun Kim, Yong-Ha Kim, Ho-Chan Jang, Seok-Ho Lee and Yoo-Ri Tae(2010) Relation between perceptive value, satisfactory level and willingness of revisit. Korea Forest Association, Academic Paper 99(4) : 49-59.
6. Jeon, Seung-Hoon(1991) Current status of domestic botanical gardens. Environment and Landscaping 44 : 50-53.
7. Jeong, Yeon-Soo(2009) Comparison of Usage Behavior and Awareness of Park and Arboretums. MS Thesis. University of Kyungpook, Daegu.
8. Jin, Hye-Young, Bong-Gu Lim and Kwi-Gon Kim(2001) Research on creating techniques for biological arboretums in urban area. Korea Ecological Environment and Archtecturaal Association, Academic Seminar Thesis Series 12(1) : 159-166.
9. Kim, Jong-Seon, Do-Kyo Oh and Se-Bin Kim(2010) Analysis on visitors' view on walk trail at Hanbatt arboretum: Focused on importance-satisfaction analysis(ISA). Korea Forest Association Paper 99(3) : 404-413.
10. Kim, Kwi-Gon(1994) City Park and Green Zone Planning and Designing. Seoul: Seoul National University Publishing Department.
11. Kim, Sin-Won, Joo-Whan Seo and Joon Huh(1999) Re-formation plan for botanical garden in Seoul Grand Park. Korea Forest Association Paper 3(1, 2) : 71-81.
12. Kim, Tae-Jin, Yoon-Soon Hong, Seung-Hong An and Woo-Hyuck Byun(2005) Research on creation trend of private arboretums. Korea Forest Association Paper 9(1) : 49-59.
13. Korea Forest Service(2007) Research on Public Awareness of Forests. A Korea Forest Service Report.
14. Korea National Arboretum(2008) Research Report on Visitor Monitoring in Korea National Arboretum(2005~2007). Korea National Arboretum Report.
15. Kwon, Min-Hoon(2009) Assessment on Satisfaction and Functionality of Botanical Garden and Arboretum. Ph. D. Dissertation, University of Sangmyoung, Cheonan.
16. Lim, Yeon-Jin, Joon-Kyu Bae, Jin-Soon Joo and Hyun-Joong Jim (2005) Analysis on public arboretum visitor behavior and satisfaction. Korea Forest Association Paper 9(2) : 21-27.
17. Lim, Yeon-Jin, Joon-Kyu Bae, Jin-Soon Joo and Hyun-Joong Jim (2008) Analysis on motivation of visitors to public arboretums and satisfaction. Korea Forest Association Paper 12(2) : 47-55.
18. Park, Ji-Na(2009) Research on Tourists Satisfaction Based on Perceived Crowding and Assumption of Social-Psychological Acceptance of Arboretums: On Visitors of the Garden of Morning Calm. MS Thesis. University of Kyonghee, Seoul.

Received : 22 November, 2010

Received in Revised : 24 December, 2010

Accepted : 25 December, 2010

Three Anonymous Proof-readers