

Women's Perceptions of and Behaviors toward Forest Experiences in Germany, Austria, Switzerland, and South Korea

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Abstract

The present study is a comparative analysis on perceptions and behavior toward forest experiences by gender and country. The research question is whether Korean women are enjoying their forest experiences and outdoor activities as part of common forest welfare, with increasing needs and social demand. For this study, a questionnaire survey and interviews were conducted with 274 women and 276 men who visited 6 cities and 12 urban forests in Germany, Switzerland, Austria, and South Korea. Among the various countries, Korean women had a very low frequency of forest experiences. Their satisfaction level with outdoor activities, facilities, and management conditions was also low. Their distinctly low frequency in visiting forests compared to that of Korean men was identified to be significantly related to most of the survey items such as outdoor activities, facility management, and health; this showed that impediments to Korean women's forest experiences lead to them having negative perceptions. The interview results revealed that Korean women's unclear understanding of forest ecology, high demand for amenities, and passive motivation and behavior for visiting forests come from limited forest experiences. Korean women's narrow forest experiences are due to a lack of spare time based on their traditional roles in a male-centered society. Their lack of spare time starts a vicious cycle of limited forest experiences, passive behavior, and negative views. Korean women's limited forest experiences represent failed gender equality in forest welfare, and this requires an urgent remedy.

Key words

gender equality, leisure constraint, Korean women, nature experience, forest

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Introduction

Women and Forests

Gaia, Demeter, and Rhea are the names of earth and harvest goddesses that reflect the Greek view of nature and fertile land as feminine (Rose 1991; Blundell, 1995; Um, 2003; Choi, 2006; Lee & Kim, 2007; Merchant, 2014). Indeed, nature's landscapes, such as flowers, gentle hills, forests, and abundant produce are symbolized as female by almost all cultures (Luke, 1981). Nature and women have been regarded as the same entity through most of human history (Ortner, 1972). However, nature's landscapes in the modern age have undergone changes to their characteristics and functions as a result of destruction and transition (Meyer & Turner 1992; Cramer, Bondeau, Woodward, Prentice, Betts, Brovkin, & Young-Molling, 2001; Mayaux, Holmgren, Achard, Eva, Stibig, & Branthomme, 2005). In male-centered societies, women were regarded as men's helpmates, and sexual partners, but also as defectives (Garcia, 1982; Kilbourne, 1990; Marx & Jasmin, 2002; Gatewood, Brush, Carter, Greene, & Hart, 2009). Several studies on nature-based tourism and recreation found that women had negative perceptions of and passive behaviors toward outdoor activities (Shaw, 1994; Jackson & Henderson, 1995; Shaw, 1999).

In Korean society, forest experiences and outdoor activities are associated with social welfare by such key words as leisure, quality of life, health, and education. Considering that, is the opportunity to enjoy forests offered equally to both genders? Men reportedly have higher participation rates in outdoor activities and sports that require physical strength or aggressiveness; men also report more satisfaction with forest activities and wildlife than women (Bennett, 1998; Autry, 2001). The reason for this difference is not about physical strength; rather, there are complex causative factors involving personal, social, and environmental limitations. If elements exist that prevent women from enjoying nature experiences as much as men enjoy them, it is important to redefine the provided forest experience for the common welfare of all. To that end, it is essential to perform gender-based comparative analysis to identify the characteristics of women's outdoor activities, perceptions of forest experiences, and limiting factors.

Forest Welfare in Korea

Korean forest management passed beyond simply producing lumber for numerous purposes and now functions to provide public welfare, the estimated worth of which was 126 trillion KRW in 2014 (KFS, 2015). This public welfare function promotes leisure and health for the quality and abundance of life as well as environmental protection, such as preventing disasters and preserving landscapes. Public demands for forest experiences have led to the development of 162 Recreational Forests since 1988. Subsequently, Korea established an abundant and diverse forest welfare system: 184 Forest Park Sites, 5 Healing Forests, 67 Traditional Village Forests, 2,326 Green Ssamzi Forest (urban pocket forests), 281 Forest Parks, 1,346 Meditation Forests, 46 arboretums, 16 botanical gardens, and 13 Forest museums (KFS, 2015). In 2013, a national master plan for forest welfare was established, which furthered the development of forest welfare for recreation, therapy, and education (KFS, 2013). In 2016, the Korean government plans to reinforce a law that promotes forest welfare. Currently, forest welfare policy in Korea is a support system for all stages of human development, demonstrating the vital role and value of forests, from prenatal care through burial. However, a study on women's leisure activities found that women's enjoyment of forest welfare is subordinate to men's forest activities (Jackson & Henderson, 1995), and women are apparently restricted from participation and have unequal opportunities for outdoor activities (Kim, 2010). In Korea, where women's societal and labor market participation is increasing (Kim, 2006; Jung, 2007), it is vital to analyze the factors that encourage or restrict women's opportunities to participate in forest welfare because such participation likely matters to their quality of life.

Goals

To identify women's perceptions and behaviors toward forest experiences in different forest environments and to dynamically examine gender-specific characteristics, the present study conducted a comparative analysis that compared and contrasted Korea with Western European countries that have well-developed forestry industries. Germany, Switzerland, and Austria began forestry study many years ago and have developed advanced forestry

management strategies. These countries are good examples of forest welfare because all aspects of forestry are developed, including high lumber production, environmental education, forest kindergartens, forest therapy, urban forests, disaster prevention, forest management, and wood processing industries (BFW, 2012; BAFU, 2014; BMEL, 2014). The present study aimed at examining Korean women's opportunities for forest experiences and also the restrictions they might face by comparing the behaviors and perceptions of Korean women with those of urban women in Western European countries with highly advanced forestry environments. The present study had the following four major goals.

- It aimed to identify women's understanding and perceptions of forests and their behaviors toward forests. A survey was conducted of Korean women's experiences visiting forests, their outdoor activities, their health perceptions of forest experiences, and the extent of their opportunities to enjoy forests by comparing gender-specific data.
- The study further aimed to examine the changes to forest landscapes that are the foundation of forest experiences and outdoor activities. The density of Korean forests has increased drastically since 1953, from 40 million cubic meters to 900 million cubic meters (Engelhard, 2004; KFS, 2015), suggesting that the forest floors have changed regarding accessibility, transition, and density. This increase also implies that there have been changes in public access to forests and the enjoyment opportunities that influence perceptions of and behaviors toward forests.
- The study additionally aimed to clarify social demands and develop directions for forest welfare in Korea. During the period of rapid industrial development, the Korean people were separated from nature (Lee, J. H., 2010; Lee, 2013) and there was a drastic decrease in forest experiences. To those born and raised during that period, forests could be like a new world that they have never explored. However, demands for forest experiences for health and a high quality lifestyle continued to increase as economic standards increased, which led to the discourse on governmental forest recreation and therapy.
- Based on an examination of socioeconomic and environmental changes, the present study aimed to identify Korean women's understanding, perceptions, and behavioral differences regarding forests and to investigate the reasons and factors related to these features. By comparing

Korea with Western European countries that have gender equality and forest environments different from Korea, this study intended to clarify Korean women's unique perceptions of forest experiences and the characteristics of their outdoor activities. Furthermore, the present study examined the factors that limit Korean women's forest experiences and explored the possibilities of Korean women's enjoyment of forests without gender discrimination as part of the universal welfare experience.

Method

International and Individual Survey

A field study was conducted in Korea, Germany, Austria, and Switzerland, targeting women who visit urban forests. Six forests with the largest number of visitors in major Korean cities (Seoul, Daejeon, and Daegu) were selected as the Korean survey areas (See Table 1). For the comparative analysis, six urban forests with the largest number of visitors in Berlin (Germany), Zurich (Switzerland), and Vienna (Austria) were selected, with the help of local university research teams (See Table 1). The survey was conducted between 10 a.m. and 6 p.m. in July and August 2010, 2012 and 2013. The participants were chosen randomly from among the visitors and given individual interview questionnaires. The languages used were Korean (in Korea) and German (in Europe). The average response rate was 90% in Korea and 36% in Germany, Austria and Switzerland. The participants were a total of 274 female respondents: 124 in Germany, Austria and Switzerland, combined, and 150 in Korea and 276 male respondents: 129 in Germany, Austria and Switzerland, combined, and 147 in Korea. Altogether, 550 cases were used in the analysis (See Table 1).

Table 1.
Description of Surveyed Urban Forests

City, Country	Target urban forest	Area (ha)	Female respondents (N, age range)
Berlin, Germany	Volkspark Jungfernheide Köpenick-Müggelbergen	146	44, 22-70
		740	
Vienna, Austria	Wienerberg Laaerberg	117	41, 22-80
		125	
Zurich, Switzerland	Uetliberg Zuerichberg	772	39, 26-72
		397	
Seoul, South Korea	Bukhansan National park Seoul urban forest	7991	55, 19-73
		115	
Daejeon South Korea	Bomunsan Doon-san park	1557	46, 18-66
		37	
Daegu South Korea	Dalsung Urban park Aapsan	13	49, 19-78
		1677	

Note. N=number of respondents.

Questionnaire and Interviews

Structured questionnaires are easy and fast to collect and process; however, it can be challenging to include detailed or complex responses on topics that cannot be quantified or objectified (Bogner, Littig, & Menz, 2014). Therefore, the respondents' general behavioral characteristics were obtained in structured questionnaires and their perceptions of forest experiences were obtained in interviews, which allowed us to learn about the respondents' intentions. The questionnaires included categorical items and indices. The categorical questions asked about the participants' ages, genders, frequency of visiting forests, travel time to the forest, method of travel, duration of visits, purposes of visits, and types of outdoor activities. Index questions concerned the extent of satisfaction with forest landscapes, outdoor activities, management and utilization, facilities, and mental and physical health. Responses were given on a five-point Likert-type scale ranging from 5 (*very high satisfaction or a highly positive perception*) to 1 (*very low satisfaction or a very poor perception*). The items in the interviews were: (1) satisfaction or dissatisfaction with the forest landscape of the recreational forest and preferences for forest experiences; (2) evaluation of overall management of recreational forests, and facilities; and (3)

perceptions of health restoration and healing in the forests. The questionnaire took between 30 minutes and 70 minutes per person to complete. All interviews were recorded, transcribed, and analyzed.

Analysis of Forest Visitors' Behaviors and Perceptions

To identify the relationship between behaviors toward forest experiences and the extent of satisfaction with and perceptions of forest experiences among Korean and European women, contingency tests and analyses of variance were performed. To test the effects of forest experience opportunities on satisfaction and perception, a multivariate analysis was performed.

Results

Visitors' Characteristics and Behaviors

The purpose of forest visits and activities can be explained based on previous forest experiences. Korean women visited forests less often than European women, and they had simple motivations: they went to the forest to relax and rest, with little or no interest in outdoor activities. European women had clear and active reasons for visiting the forests. Women in Western Europe frequently visited forests and they had short travel times (See Table 2). This finding is similar to the report that Germans could visit forests within 15 minutes by foot or by bike (GALK, 2010). In comparison, the Korean women had long travel times to the forests and visited them less often (See Table 2), which supports the finding of a Korean-German comparative study on forest recreation and leisure behaviors (Lee, J. H., 2010). The gender-specific differences between Western Europe and Korea manifested themselves very differently. Men's and women's behaviors were similar to each other in Europe. There were no statistically significant differences in behaviors toward forests, suggesting that opportunities to enjoy forests and nature were equally offered to the men and women in the sample. However, Korean women's visits to forest were clearly less frequent than Korean men's visits (See Table 2), and the difference was statistically significant, casting doubt that women and men had equal opportunities for forest experiences.

Table 2.
Comparison of Behaviors (%) and Perceptions of Forest Experience

		Korea		Europe	
		Female	Male	Female	Male
Visit frequency	2/day	1.2	0.9	2.3	5.6
	Everyday	5.6	6.0	14.7	16.8
	2-3/week	8.1	11.2	22.5	23.1
	1/week	8.7	19.0	22.5	19.6
	2-3/month	7.5	9.5	13.2	14.0
	1/month	16.8	12.1	8.5	8.4
	2-3/year	32.9	25.9	6.2	2.8
	Less 1/year	19.3	15.5	10.1	9.8
Travel time	5 min.	6.7	6.0	24.0	21.6
	5-15 min.	22.7	24.1	37.2	37.7
	15-30 min.	40.5	45.7	33.9	35.1
	30-60 min.	30.1	24.2	5.0	6.0
Travel method	Walking	18.1	21.4	32.6	32.8
	Bicycle	1.2	4.3	20.9	27.0
	Public transport	28.9	27.4	18.6	18.2
	Automobile	51.8	47.0	27.9	21.9
Visit duration	Less than 30 min.	1.8	1.7	13.8	13.9
	1-2 hours	51.5	47.4	55.9	50.3
	4 hours	46.0	46.6	26.9	29.1
	1 day	0.6	4.3	3.4	6.7
Motivation	Relax	60.4	59.3	53.8	56.4
	Active sport	8.1	7.9	21.5	22.1
	Social activity	1.5	0.7	3.2	3.3
	Child, Family	14.7	12.9	8.6	8.7
	Etc.	15.2	19.3	12.9	9.6
Perceptions of forest experiences	Nature	4.03	3.91	4.08	3.93
	Activity	3.87	4.00	4.63	4.59
	Management	3.71	3.98	4.53	4.57
	Facility	3.63	3.91	4.31	4.29
	Physical health	4.14	4.05	4.69	4.42
	Mental health	4.31	4.33	4.94	4.67

Analysis of Perceptions in the Interview Survey

Nature Experiences: Satisfaction, Images of Pure Nature

Regarding the nature landscape experience, the European female visitors provided 124 different responses, which cannot all be provided due to

space limitations; however, the following four quotations by European women represent the most common responses.

I come here three times a week. It takes me ten minutes from home. Being here for a couple of hours is enough. It is like a small oasis. Forests are a very important part of life and can be seen as a standard of life.

This place can't be called natural forest. It is rather an artificial place for recreation, so I can't be satisfied with the quality of the nature experience. Unless it is Schwartzwald (Black Forest) or the Alps, we can't call places like this pure nature.

It is noisy because of too many visitors. I can hear cars drive by. This is a replacement of a natural forest. I want a more dense forest. I want to enjoy the solitude.

I moved from Arlberg, Austria. In comparison to the wild forests in Arlberg, there is much artificial management here. Nevertheless, I like the convenience that it is near the big city.

From these examples, it is apparent that European women wanted denser forests and they criticized the differences from the wild forests. European women with more opportunities for nature experiences (Elsasser, 1996; Zundel, 2002; Ottitsch & Krott, 2005; Lee & Bürger-Arndt, 2010) were more sensitive to environmental pollution from the city, such as traffic noise from the cars and pedestrians. This result supports findings that nature experiences influence perceptions and mental health (Bratman, Hamilton, & Daily, 2012), and that a high quality nature experience is desirable (Shanahan, Fuller, Bush, Lin, & Gaston, 2015). Korean women reported the following:

Protecting nature is very important. I wish there were more spaces for resting that are wide, clean, and convenient.

I wish there were walking trails with more trees and flowers. I wish there were flower gardens where I could see more beautiful

flowers. I would like cool shades and a spacious grass field with benches. I feel so closed-in.

I hope there will be more playgrounds and programs and events for children to experience nature.

Korean women emphasized the need to preserve nature, but they lacked a perception of the nature ecology concept. About 67.2% of Korean forests are young trees (less than forty years old), showing forest succession with well-developed upper and lower story (KFS, 2015). Dense and complicated forests are quite different from the spacious grass fields that the participants wanted. Korean women's requests for artificial management and facility installation imply that they rarely had opportunities for forest experiences.

Demands for Management and Facility

European women reported the following.

I wish that special programs and policies for nature preservation would be reinforced better. The nature landscape of this area should be well preserved. The system for managing and preserving nature should be implemented better.

I wish there were no events. Too many visitors and too much noise [···] I think the number of visitors should be limited. The standard for a satisfying nature experience is fresh air and quietness.

I like the way it is now. I am satisfied. I don't have any complaints.

The European women wanted to limit the factors that they felt were hindering a nature experience and persistent policies to preserve nature instead of improved facilities or management. They were apparently satisfied with the nature experience in the urban forests that are easily accessible despite their differences from wild forests. This could be interpreted as a demand for continuous maintenance of these opportunities. The Korean women stated as follows:

I wish there were more facilities and management. There should be more public bathrooms, water fountains, signs, and playgrounds. There is no safe facility at the trails and shelters. We need more benches. And, I wish there was a convenience store, too.

It would be nice to spray insecticide. There are too many bugs, including spiders, mosquitos, and ants [...] I wish there were more special events for children to experience.

There should be more soap and toilet paper. The public restroom has a sanitation issue. The building is also old and dirty and it needs remodeling. I wish there were nursing rooms, too.

Although were having nature experiences, they wanted special amenities similar to those that they would find at theme or amusement parks. Their high expectations for built amenities and management were expressed in their dissatisfaction with the current management of the facilities. This finding supports previous results that visitors who lack nature experiences tend to have higher demands for manmade conveniences (Fagan & Eagles, 2000; Youn, 2000; Holdnak & Rodgers, 2004; Gursoy & Chen, 2012; Lee, 2013).

Restoration and Health in Forest

European women voiced strong opinions and participated in the interviews longer than the Korean women.

I am 100% confident about the connection between health and forest! I believe that walking in the woods and breathing fresh air every day is more effective than going to the forest therapy program that the insurance company pays for.

To me, forests are gifts from God. I remember when I was sick. I personally experienced it. I come to the forest to survive.

I am certain! It can heal all diseases. I have experienced it all my life. I stay in the forest when I am sick. I get well naturally. It

is like an antenna. We have to tune our life to forests.

When my child was young, we lived in the woods in Romania. The place had fresh air and a great environment. My son's asthma went away.

Forests produce endless positive energy in comparison to city spaces. That is the most important part. The mental and psychological effect is certain. By spending time in forests, people can be rejuvenated.

All of the respondents were sure of the positive effects on mental health, and all of the respondents had experienced the restoration of their personal health in forests, suggesting that abundant forest experiences can form positive perceptions of health restoration. The Korean women mostly responded with short and simple answers, such as "It is possible," instead of sharing personal and detailed answers.

It seems to be effective for atopic dermatitis for my child. The forest with phytoncide has a healing function.

When I am depressed or stressed out, coming to open forest helps me feel relieved.

I have a good memory of enjoying forest therapy when I was pregnant. It refreshed my mind.

Because there is a great deal of personal stress in Korean society (Chang et al., 2005; Cho et al., 2008; Park, Min, Chang, Kim, & Min, 2009), the majority of the respondents mentioned mental health, and a few people provided positive responses about their children's skin diseases. However, there was no specific mention of other physical health benefits. The reason that Europeans and Korean women apparently differed in their assessments of the effects of forests on health seems related to the respondents' personal experiences. The European women who had continuously enjoyed high quality nature experiences had strong opinions and positive perceptions based on their experiences, which is different from the Korean wom-

en, who had only rare personal experiences with health restoration in forests.

Perception Analysis by Quantitative Survey

Nature Experiences and Outdoor Activities

Despite their infrequent visits to forests and their simple motivations (See Table 2), Korean women's satisfaction with their nature experiences was high, even higher than that of Korean men. There was no statistical difference between them and the European women in nature experience for all ages (See Table 3). However, regarding outdoor activities, Korean women's satisfaction level was lower than that of Korean men and the European respondents. There was statistical difference for all ages except for people in their 50s. Korean people tend not to have clear goals or activities in mind when they visit a forest; they simply to visit the forest (Lee, 2013). Korean women's dissatisfaction with outdoor activities can be interpreted as the result of their high expectations for the facilities, services, and programs; their lack of forest experiences; the absence of desired outdoor activities; and passive nature experiences.

Management and Facilities

Korean women had higher expectations for conveniences, such as benches and public restrooms (See interview survey), and they shared a lower satisfaction level. Statistically, it was lower than that of Korean men (See Table 2). Both Korean and European women showed significant differences in their satisfaction with management and facilities based on whether they were in their 20s, 30s, or 40s (See Table 3). These results matched the findings of previous cross-cultural studies on satisfaction and behavioral intention in nature and variable ethnic group (Li, Lai, Chick, Zinn, & Graefe, 2007). Considering previous studies' findings that visitors with less forest experience tended to have higher expectations for facilities and management (Fagan & Eagles, 2000; Youn, 2000; Holdnak & Rodgers, 2004; Gursoy & Chen, 2012; Lee, 2013) and that cultural values influenced satisfaction and behavioral intentions significantly (Li, Chick, Wu, & Yen, 2010), their higher demands may relate to their infrequent forest experiences.

Health

For the analysis, health was classified as mental or physical health. Both Korean and European women provided many positive answers (See Table 2). In particular, 116 European women (94%) rated health as a “five” on the five-point scale. This finding suggests that the restorative effects of the forest have become universal because nature based methods, such as Kneipp therapy, climate therapy, and aromatherapy, were established as independent fields of study in the 19th century (Maretzki, 1987; Nischan, 2006; Schencking, 2009). Legally, European insurance companies cover natural healing programs, and women’s natural healing programs, in particular, support welfare systems related to childbirth and child-rearing (Arnhold-Kerri, Sperlich, & Collatz, 2003; Sperlich, Arnhold-Kerri, & Geyer, 2011; Jokinen, 2014).

Table 3.

Results of the Variance Analysis of the Perceptions to Satisfaction between Korean Women and European Women by Age

	10s	20s	30s	40s	50s	60s-	Korean F&M	European F&M
Nature Experience	3.189	.238	.679	2.770	.866	.582	1.187	1.994
Outdoor activity	5.993*	10.620**	17.885***	11.360**	.909	7.186*	1.455	.173
Management	3.347	12.662**	4.942*	11.299**	9.417*	2.911	5.083*	.162
Facility	5.816*	21.882***	8.627**	10.268**	1.317	3.903	4.533*	.787
Physical health	.473	5.694*	10.086**	1.237	4.018	6.779*	.536	4.017*
Mental health	3.376	22.775***	11.632**	1.926	2.846	15.179*	.035	7.951*

Note. F&M=female and male respondents.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Analysis of Visitors’ Behavior and Perception

To identify the relationship between Korean women’s lack of forest experiences and their perceptions of and behaviors toward forest experiences, a multivariate analysis was performed. The results of the analysis testing the interaction effect are as follows.

There was no interaction effect between the frequency of visits and nationality (Wilks lambda=.946, $F=.829$, $p=.666$). However, the results found that frequency of visits (visits that give people a direct experience of forests) and nationality had a significant interaction effect on satisfaction with

the forest experience and outdoor activities (See Table 4). This result suggests that a greater frequency of visits to a forest relates to higher satisfaction with outdoor activities, facilities, and management, and to a positive perception of health and physical health. Frequent visits were particularly identified as the factor that most clearly distinguished Korean from European women, and this was the most important factor determining perceptions of and behaviors toward forest experiences. We can hypothesize from this that an increased number of visits will result in a higher level of satisfaction among Korean women.

Table 4.

Results of the Multivariate Analysis on Female Respondents by Nationality and Visit Frequency

Fixed factor	Dependent variable	F value
Nationality Wilks lambda=.666 $F=22.927, p=.000$	Nature Experience	.290
	Outdoor activity	58.627***
	Management	54.064***
	Facility	43.962***
	Physical health	26.835***
	Mental health	55.917***
Visit frequency Wilks lambda=.776 $F=4.018, p=.000$	Nature Experience	2.441
	Outdoor activity	9.049***
	Management	6.457***
	Facility	3.661*
	Physical health	10.823***
	Mental health	3.469*

Note. * $p<0.05$, ** $p<0.01$, *** $p<0.001$.

Discussion

The Reality of Utilizing and Experiencing Forests in Korea and Europe

A forest's ecological conditions, such as forest succession and density, determine the visitor's perception and satisfaction with their forest experience and outdoor activities. Since the 11th century, Europe lacked lumber after large-scale deforestation; now, Europe only has artificially reproduced

woodlands, without any natural forests left (Zirnstein, 1996; Küster, 1999). However, the history of deforestation raised awareness of the problem. This led to the development of sustainable forest welfare, which promotes relaxation, health, and landscape preservation (Kurth, Gerold, & Ulbricht, 1994; Gadow, Pukkala, & Tomé, 2001; Küster, 2008), and has provided the foundation for forest welfare studies on various topics (Maretzki, 1987; Schencking, 2009; Nilsson et al., 2010), as well as providing the basis for legalizing forest welfare services for all citizens (Bleile, 1985).

After the Korean War, Korea's forest density decreased to 40 million cubic meters in 1953, down from 700 million cubic meters in 1910, thus disabling lumber production and creating mountain hazards (Engelhard, 2004). After the national forestation project was launched in 1973, two thirds of the total forest area (4 million hectares) was successfully turned into forests by 2007. During the first and second periods of the forestation project (1973-1987), people could not have forest experiences. Even today, now that forestation has been completed, Korean woodlands do not have many large trees that can satisfy visitors (Lee & Kim, 2012; Shin et al., 2013). Currently, forest roads play important role for recreational use (Hentschel, 2002; Bernasconi, 2004). The forest road density in Korea takes up 2.99 m/ha; the density is insufficient compared to Germany, which is 128 m/ha (BMEL, 2014; KFS, 2015).

Due to the “unprepared forests” which resulted from the large-scale forestation projects of the 1970s and 1980s, as well as a lack of time for leisure during rapid industrialization, Koreans have experienced a “severance from forests.” Today, low accessibility to woodlands (due to immature trees and insufficient forest roads) still limits people's opportunities to enjoy their forest experiences. There is a conflict between the increasing demand for forest welfare and the lack of opportunities and time to visit forests.

Limitations to Korean Women's Forest Experiences: Social Circumstances and Insufficient Spare Time

The results of the study on Korean women's perceptions of and behavior toward their forest experiences showed their dissatisfaction of forest experience, a demand for man-made facilities, unclear motivations for visiting, and passiveness in outdoor activities; these outcomes matched the findings of previous studies on the characteristics of women's leisure activities

(Johnson, Bowker, & Cordell, 2001; Rodriguez & Roberts, 2002; IUCN, 2012). The cause can be found in the differences in forest experience opportunities, social circumstances, and the barriers to women's forest experiences. In this study, identifying the factor that applies to Korean women was key to illustrating the characteristics of their views of and behavior toward their forest experiences.

The biggest hindrance to forest experiences is insufficient spare time (Henderson, Stalnaker, & Taylor, 1988). Korea is still a country where people work the longest hours (OECD, 2015), and Korean women do not have enough time for leisure (Chang, 2006; Ji, 2006; Baek & Song, 2010; Kim, Lee, & Hwang, 2015). This is the element that restricts women's forest experiences. Social circumstances and former experiences affect gender differences with regard to how people enjoy leisure activities (Harris & Wideman, 1988; Harris, 2012). The obstacles to Korean women's leisure and forest experiences derive from the social concept of a male-centered leisure culture and women's traditional roles, such as childbearing, child rearing, and homemaking (Henderson, 1990; Park & Kim, 2003; Lee, Lee, & Cho, 2006; Lee, Y. B., 2010). Although the percentage of working women continues to grow (Choi, 2015; Kim, 2015; Lee & Park, 2015), women are still expected to carry out household duties such as childbirth, child rearing, and homemaking (Han & Kwak, 2004; Chung & Chin, 2008). In the end, they have no spare time to enjoy leisure activities and relieve stress.

In a male-oriented society, the roles that women are expected to take on lead to an unequal opportunity for leisure and limited forest experiences. This study identified the obstacles Korean women face as insufficient outdoor activities and forest experiences, compared to those of Korean men and European women (See Table 2). For Korean women who have not visited forests often, forest experiences are uncomfortable and awkward; they express passiveness in outdoor activities and demand convenient facilities. Forest experiences are essential for modern women's mental and physical health, and indicate quality of life. However, Korean women have not equally enjoyed forest experiences due to a lack of spare time, which results from balancing traditional roles with participating in the labor market.

Conclusion

In the process of achieving rapid economic and industrial development based on condensed capitalism (Schumann & Martin, 1998; Engelhard, 2004), Koreans have forgotten how to relax and enjoy nature. Ironically, Korean forests (which were built after the national forestation projects following a state of extreme deforestation) were not suitable for enjoyment, and this naturally restricted people's forest experiences. Living in a male-centered society, Korean women comprise the group most alienated from forest experiences due to homemaking and maternal responsibilities. Compared to Korean men and European women, their lack of experiences enjoying woodlands distinctly manifests as low motivation and negative behavior and perceptions. In contrast, Europe has established a forest welfare system that allows both genders to equally enjoy forests via discussions on "returning to nature," the need for forest experiences, and the positive effect of strolling in woodlands (Maretzki & Seidler, 1985; Maretzki, 1987; Luyendijk-Elshout, 1989; Buijs, 2009), as well as greater gender equality (Wilcox, 1991; Hoyne, 1997; Ramirez, Soysal, & Shanahan, 1997; Verloo, 2006; Lorber, 2011; Krizsan & Lombardo, 2013). By investigating the quantitative and qualitative relationships between forest experiences, outdoor activities, health improvements, and Korean women, this study identified Korean women's opportunities to enjoy forests, their level of experiences, and their attitudes toward forest welfare. This study pinpointed gender differences in forest experiences, and by conducting a comparative analysis with three European countries where social and forest welfare are equally offered to both genders, this paper examined the differences in behavior and views.

Despite the increased demand for forest welfare based on the completed forestation project and economic development, Korean women still face limitations in terms of having opportunities for forest experiences as part of common forest welfare. Their satisfaction level with facilities and management was significantly lower than that of Korean men, which can be explained by their infrequent visits to woodlands. In contrast, European women did not display any differences from men; they enjoyed their forest experiences to the same degree. The major impediments Korean women face in enjoying forests include household labor (which patriarchal societies demand from women), in addition to their regular jobs. Compared with

men, such social expectations for “super women” roles (Newell, 1993; Chu, 2014) naturally limit women’s forest experiences.

Limited forest experiences further lead to a lack of appreciation for forest ecology, a memory of experiencing inconveniences, a demand for man-made facilities, a lack of motivation to visit woodlands, a lack of positive experiences, and infrequent visits to forests. In Korea, where forest recreation, health, and healing are being emphasized as part of common welfare, women are alienated from forest welfare and should be given many more opportunities to experience forests. Social pressures on women should be immediately removed in order to create an equal and healthy society that coexists with forest welfare systems.

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