

## STUDY ON PREFERENCE OF TOURISTS ON THE LANDSCAPE OF FLOWERING CHERRY TREES AT YOSHINOYAMA, NARA PREFECTURE, JAPAN

Junichi Imanishi<sup>1</sup>, Yosuke Harada<sup>1</sup>, Yoshihiko Iida<sup>1</sup>, Ryo Higashiguchi<sup>1</sup>, Yukihiro Morimoto<sup>1</sup>

<sup>1</sup> *Kyoto University, Japan*

**Keywords:** landscape preference, cultural landscape, sacred landscape, tourism, conjoint analysis, trade-off

### Introduction

The Japanese are particularly fond of the flowering cherry trees. The landscape at Yoshinoyama, Nara Prefecture has history of 1,300 years and is the most famous scenic place for cherry blossom appreciation in Spring. Torigoe considered that the landscape is originated from the custom of devotion of flowers to the god of mountain [1]. In the oral tradition at Yoshinoyama, En-No-Ozunu, a master of Shugendo (mountain asceticism), carved a statue of god, Zaoh-Gongen, and decided it as the principal object of worship in Shugendo. Since then, the flowering cherry trees have been planted for devotion to the god and protected as sacred trees. Recently, the landscape has been designated as an area of the UNESCO World Heritage Site, Sacred Sites and Pilgrimage Routes in the Kii Mountain Range. The landscape of flowering cherry trees at Yoshinoyama is now important cultural heritage for the Japanese as well as important economic resource for local people through tourism.

However, aging of population and depopulation at Yoshinoyama has become a serious matter to sustainably manage the landscape of flowering cherry trees. A research report on declination of tree health at Yoshinoyama pointed out that shortage of workforce and budget to daily care on the trees is one of the reasons for the declination and advised to recognize trade-off between area of planting sites and available effort on individual trees [2]. However, conventional methods such as the Semantic Differential Method to investigate landscape preference do not incorporate concept of trade-off, and thus has limitation in practical use of the result to consider preferable landscape. Therefore, we studied landscape preference of tourists at Yoshinoyama using conjoint analysis which is suitable to consider trade-off among attributes.

### Methods

We prepared a questionnaire sheet for conjoint analysis with full-profile evaluation design consisted by three important attributes that determine tourists' preference on landscape of flowering cherry trees at Yoshinoyama (Nara Prefecture, Japan): area of planting sites, percentage of healthy trees, amount of donation per one year per one person (Table 1). Then, we carried out the questionnaire investigation to tourists at Yoshinoyama in December 2011, and obtained 91 effective samples. From the data, we estimated utility of the three attributes in light of tourist characteristics: place of residence, age, gender, occupation,

income, accumulated number of visits to Yoshinoyama in Spring and throughout a year, and preference to flowering cherry trees, artificial coniferous forests, and declined flowering cherry trees.

Table 1: Attributes and levels used to the conjoint analysis

		Attributes		
		Area of Planting Sites	Percentage of Healthy Trees	Amount of Donation per One Year per One Person (*1)
Levels	Expanded to 1.5 times	Increased to 90 %	7,000 JPY (*2)	
	Reduced to 0.5 times	Decreased to 50 %	1,000 JPY (*2)	

\*1: We explained that 1 person per 1,000 persons will donate in average based on the statistical result in Japan.

\*2: The amount of donation were determined by simulating necessary budget to manage the landscape. (cf. Currency Rate: 1 TPY = 45.97 JPY = 0.55 USD, on March 21, 2012)

## Results and Discussion

The most significant difference was observed in age and accumulated number of visits. The other tourists' characteristics did not show statistically significant difference except for gender (male or female) and occupation (student or non-student).

Along with increase of age or number of visits, clear trends were observed: utility of "area of planting sites" (hereafter we call it "quantity") was decreased, and utility of "percentage of healthy trees" (hereafter we call it "quality") was increased (Figs. 1, 2 and 3).

Tens to 20s showed that utility of quantity was 2.3 times larger than utility of quality, while 30s to 40s 0.84 times, 50s to 60s 0.49 times, and 70s to 80s 0.17 times (Fig. 1). Regarding number of visits in Spring, persons who have not visited in Spring showed that utility of quantity was 1.1 times larger than utility of quality, while persons who have visited from 1 to 3 times showed utility of quantity was 0.53 times larger than utility of quality, and persons who have visited more than 6 times showed utility of quantity was 0.34 times larger than utility of quality (Fig. 2). Regarding number of visits throughout a year, persons who have visited from 1 to 3 times showed that utility of quantity was 1.1 times larger than utility of quality, while persons who have visited from 4 to 6 times showed utility of Area was 0.27 times larger than utility of quality, and persons who have visited more than 6 times showed utility of quantity was 0.33 times larger than utility of quality (Fig. 3). The result of persons who have visited from 4 to 6 times in Spring was not statistically effective due to small group size.

The trend of change of landscape preference in number of visits were slightly weaker than the trend in age. The reason was assumed that all of tourists have not necessarily visited Yoshinoyama for seeing flowering cherry trees; some of them have visited there for worshipping Kinpusen-Ji Temple, the head temple of Shugendo.

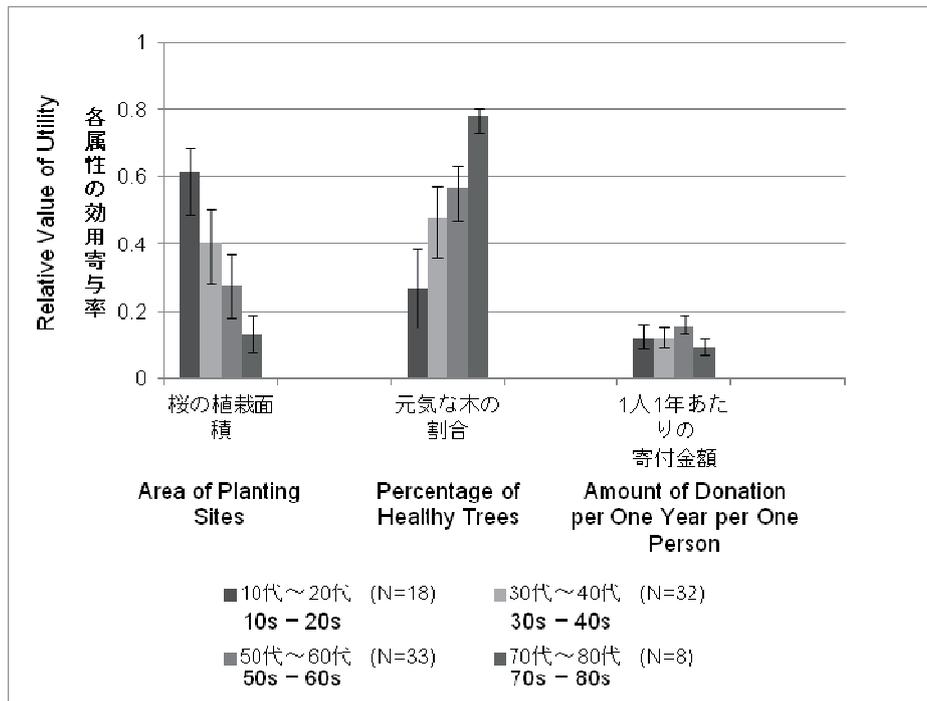


Figure 1: Relative values of utility in different ages

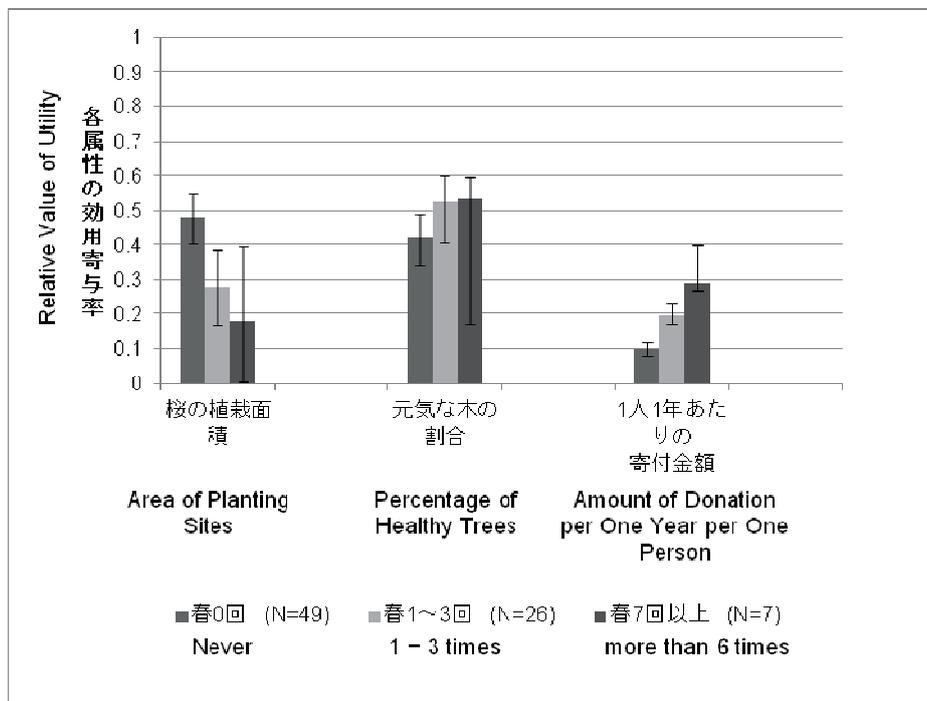


Figure 2: Relative values of utility corresponding to number of visits in Spring

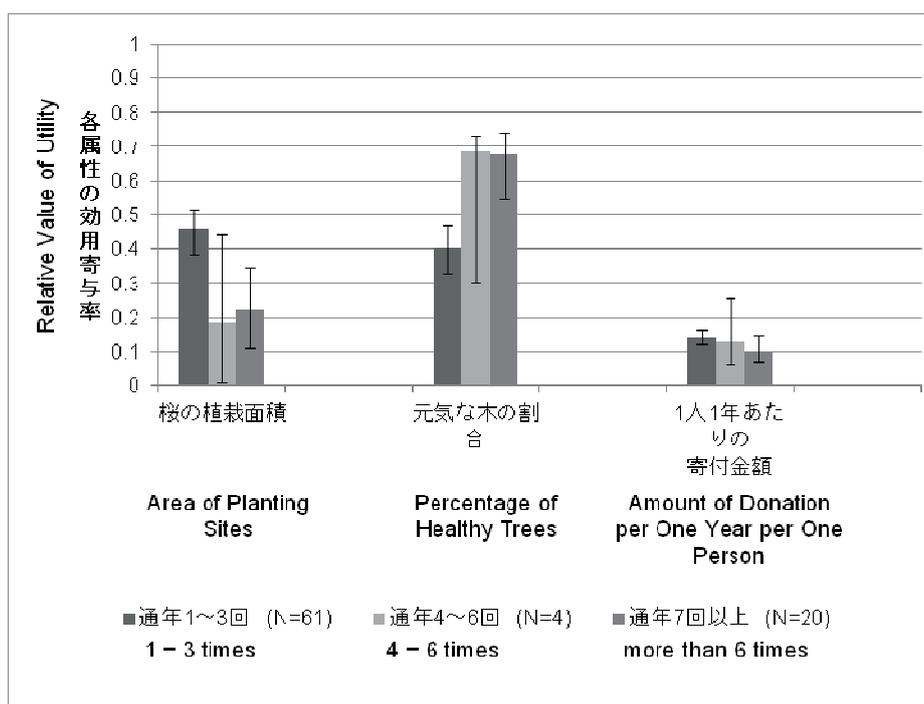


Figure 3: Relative values of utility corresponding to number of visits throughout a year

## Conclusion

From the analysis on landscape preference of tourists who visited Yoshinoyama, we found that tourists tended to change their preference from valuing quantity (area of planting sites) of flowering cherry trees to valuing quality (percentage of healthy trees) along with increase of age or number of visits. People seem to have tendency to more carefully look at landscape after gaining experiences. Considering the flowering cherry trees are sacred in Shugendo and decline of tree health is recognized as a problem by local people, it seems important to make effort to change attitude of tourists for admiring landscape of flowering cherry trees, from quantity to quality, so that we can sustainably manage the trees with limited workforce and budget, and thus conserve the cultural landscape with long history. For example, it may be effective that education and donation are made to caring about trees rather than planting more trees.

## References

- [1] Torigoe, H. Visiting Flowers to Yosihonoyama. Shueisha Shinsho, 205 pp., 2003. (In Japanese)
- [2] Yoshinoyama Sakura Investigation Team. Heisei 20 – 22 Fiscal Years Report of Investigation on Flowering Cherry Trees. 184 pp., 2011. (In Japanese)