

CONJOINT ANALYSIS OF CHOICE ATTRIBUTES AND MARKET SEGMENTATION OF RURAL TOURISTS IN KOREA

HEE-JEONG YUN*

Keywords

rural tourism, rural leisure, choice attributes, market segmentation of rural tourism, regional planning

Abstract

This study aims to analyze the attributes considered in choosing rural sites for tourism purposes by city dwellers and the market segmentation of rural tourism from a rural tourism demand perspective. For this purpose, this study investigates the attributes of rural areas considered in the selection of rural tourism destinations by urban dwellers using a conjoint model as a stated preference model. Based on literature reviews, two questionnaire surveys are conducted. The first questionnaire survey is performed in the 4 cities of Seoul, Daejeon, Suwon and Chuncheon with 408 urban residents. The second questionnaire survey is performed in the 5 cities of Seoul, Chuncheon, Daejeon, Cheonju and Busan with about 1,060 urban residents. The study results suggest that according to part-worth and vector models, the most important attributes in selecting rural areas for tourism are experience programs and facility convenience. The fitness level of the model ranges from 0.917 to 0.986, which is very significant. Among the 5 attribute's levels, the rural residents' obliging service, the traditional and the ecological programs and the facilities about information and accommodation are more critical factors than other levels. Utilities of each level decrease as cost and arrival time increase. Regarding the result of market segmentation, respondents having intention to visit can be divided into 4 groups; (1) facility/program-oriented group, (2) service-oriented group, (3) time-oriented group, and (4) simple participants group. These results can provide insightful information for regional planning strategies, such as selection of market segment type and the key factor of facility and space planning.

* Hee-Jeong Yun, National Academy of Agricultural Science, RDA, Suwon 441-853, Korea. Tel. : +82-31-290-0267, E-mail : hjyun@rda.go.kr

I. INTRODUCTION

Since the late 1990s, the Korean government has been introducing a variety of rural development projects including green experience rural village projects, traditional rural theme village projects as well as comprehensive rural village development projects. The government also enacted a special law on the improvement of the quality of life and promotion of rural development for farmers and fishermen. However, while the number of government projects for the development of rural districts has been growing rapidly, they were not considering the mechanism of the market, the balance between supply and demand, but instead, have been focusing mainly on the supply aspects such as socio-economic conditions and available resources in rural areas. As such biased policies caused regional development plans to overlook the necessity of positive and objective analysis on the demand (MFAFF, 2005), there is skepticism about the justification and effectiveness of development as well as hasty expectations by interest groups (KREI, 2005). Also, while the number of rural sites under development plans grew exponentially, there have been little studies attempting to identify the regions with competitive elements and those where rural areas are selected by the citizens. Lacking in such data, plans have been developed without appropriate target markets or alternative marketing strategies, thus negatively affecting their profitability, operation and management, not to speak of economic ripple effects and sustainable future development. Under the circumstances, this study adopts a demand-orientated approach and analyzes the attributes taken into account by city dwellers in choosing rural sites for tourism purposes and the market segmentation of rural tourism. The results of analysis will allow us to primarily identify the attributes affecting the selection by users in their development of regional plans and are expected to be useful as a resourceful material in the development of marketing strategies on, for example, the selection of target markets and segmentation of markets.

II . LITERATURE REVIEWS

1. Behavior and selection of rural tourism by city residents

The behavior of city dwellers visiting farm villages since the 1990s was dubbed as green tourism, rural tourism or agri-tourism (Fleischer & Tchetchik, 2005; Hong et al., 2003; McGehee et al., 2007; Murphy & Williams, 1999; Sharpley, 2002; Unwin, 1996), but a recent, unified usage of 'rural tourism (RT)' is gaining persuasive power as it represents a clearer geographic concept. Among a variety of studies on rural tourism, those focused on demand aspects revealed that rural tourism is closely related with the population of city residents or their frequency of visits, duration of visit and their perceived level of reasonable cost (Fleischer & Tchetchik, 2005). Availability of descriptive programs also appeared to be one of important factors (Kim, 2004).

A survey on major characteristics of city dwellers who visit rural villages revealed evident personal differences and the preference for active experience and adventure. Natural and cultural settings and the rurality of destination were also considered important by the participants. Participation by women was higher than that of men (Murphy & Williams, 1999). Many participants of rural tours were families with primary school children born when their parents were in their 30s or 40s. There was a pronounced characteristic of visitors consisting of families of rural-originated parents with city-grown children, with the purpose of parents, who have an old memory of rural life in their own youth, wishing to share their experiences with children (MFAFF, 2003). A survey on the past experience of visiting rural villages shows that a higher number of visitors had a better understanding of related terminology and were younger and had higher education with rural life experience (RRDI, 2003; 2004a; 2004b).

2. Study of conjoint model for the analysis of site choice attributes

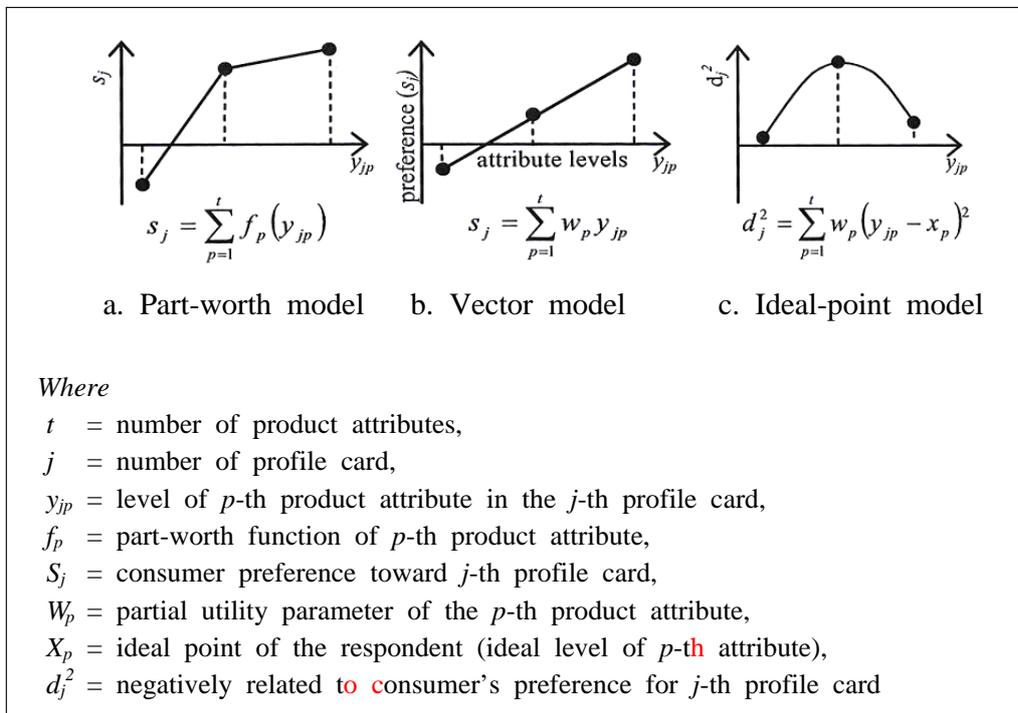
Logit model, conjoint model, and conjoint choice model, which is a combination of logit model and conjoint model, are typical models used for analyzing the attributes of site choice. Logit model is a typical revealed preference model

that has limitation in identifying detailed choice attributes, although it analyzes actual choice data at aggregate level (Hong, 2000; OECD, 2000; Yun & Kim, 2006). Conjoint choice model is also used frequently, but it was also ruled out in this study as experiment design is so difficult and introduction of external parameters and parameters correlation control are not possible (Hong, 2000; Kelly et al., 2007). Therefore, conjoint model was chosen to be most appropriate for this study.

Conjoint model is a stated preference model that allows measuring the preference by deducing the utility at the level of each attribute. Choice of consumers is predicted from this preference. Here, the preference at the individual attribute level is called 'utility' or 'part-worth,' which is the average value of coefficients derived from regression analysis performed for each respondent of the questionnaire. Preference point or priority of each profile is used as a dependent variable and the level for each attribute an independent variable. Part-worth model, vector model, or ideal-point model are commonly used for the identification of model preference (utility) (figure 1).

Part-worth model is suitable for qualitative attributes, but it requires estimation of a large number of coefficients as all the unused levels are dummies in this model (Green & Srinivasan, 1990). Also, the validity of prediction drops sharply when the number of profiles is less than 1.5 times the number of coefficients. As a means to complement this, a vector model of a linear equation form may be used where the value of each level is used as it is when the utility value of the level of each attribute consists of linear more or linear less rate-scale. Vector model is suitable for the attributes such as price (cost) or distance whose utility changes lineally as its level increases or decreases (Green & Srinivasan, 1978). Ideal-point model, a quadratic equation that squares the value of level, is another model that can be used, but it is not popular because the number of coefficient increases as in part-worth model. Having considered pros and cons, a mixed model of part-worth model and vector model is applied in this study for the analysis of site choice attributes of rural tourists.

FIGURE 1. Conjoint models (Green & Srinivasan, 1978; Kotri, 2006)



III. METHOD

1. Selection of attributes

As conjoint model identifies relative preference to the subject which is comprised of many attributes and many levels, the process of the selection of attributes and levels has to be logical. Attributes and levels may be determined in various ways based on the personal view of or reference review by researchers, survey by specialists, interviews of focus groups, or general questionnaire (You, 1997). As this study aims to identify the choice attributes of the general public, we selected the attributes using a general public questionnaire prepared based on reference reviews. 3 to 7 attributes are generally suggested (Cho & Shin, 2005; Dellaert et al., 1995; Kim & Ahn, 1995; Mazanec, 2001; Pina and Delfa,

2005; RRDI, 2004b; Suh and McAvoy, 2005), and, in order to facilitate the survey, it is recommended to include only the attributes that are necessary.

Based on a review of references, we initially selected 8 attributes for this study (Kim, 2003; Kim & Lee, 2004; RRDI, 2004a 2004b): (1) obliging service (2) facility convenience (3) surrounding scenery (4) food quality (5) experience programs (6) places of interest in vicinity (7) arrival time (8) cost. A primary survey was conducted for these 8 attributes using a questionnaire on city dwellers. The survey was conducted on 408 subjects living in 4 major cities (Seoul, Taejeon, Suwon and Chuncheon) during the period from September 30 until October 8, 2006, using a multiple response analysis. Based on the results of the survey, we discarded 3 least recognized attributes, food quality (4.0%), points of interest in vicinity (8.8%) and surrounding scenery (9.2%) and finally selected 5 attributes: (1) obliging service (12.5%), (2) facility convenience (16.7%), (3) experience programs (21.0%), (4) arrival time (12.2%) and (5) cost (11.9%) (Table 1).

2. Selection of level

Levels are the differentiated representation of an attribute characteristic. In conjoint model, where the relative importance of each attribute is determined within the range of utility value, the importance of an attribute increases as its level becomes more (Green & Srinivasan, 1990). Therefore, the number of levels should be similar for each attribute ranging 2-4 (You, 1997; Huh, 2006) and it is important to use the values that reflect actual market and have the power of discrimination.

Obliging service was presented at 'obliging' and 'disobliging' levels considering the power of discrimination. Based on the study of actual state of traditional rural theme villages (<http://www.go2vil.org>), the levels that showed higher frequency were presented - accommodation, information and resting facility for facility convenience and farming, ecology and traditional culture for experience programs. As many sites had inconvenient facilities and lacked experience programs, they were also included. Facilities inconvenience, in this case, refers to inconvenient state of all facilities. The levels of arrival time were presented at 1 hour 30 minutes, 3 hours and 5 hours considering the discriminating power and the results of the study by Rural Resources Development

Institute (RRDI, 2004a) (1-2 hours 29.3%, 3 hours 29.3%, over 4 hours 23.2%). Although the result of the RRDA study indicated the average cost per person to be 58,479 won, the cost levels in this study were presented at 15,000 won (about US\$ 15), 30,000 won (about US\$ 30), and 50,000 won (about US\$ 50) because we were certain that the RRDI figures also included the cost of visits to other destinations in the vicinity. The arrival time was based on one-way travel and the cost was for the entire cost of one visit for 1 person including the costs of travel, participation in experience programs and accommodation (Table 1).

TABLE 1. The attributes and levels included in factorial design of conjoint analysis

Attributes	Levels
Obliging service	Obliging Disobliging
Facility convenience	Inconvenient Convenience of accommodation facility Convenience of information facility Convenience of resting facility
Experience programs	Non-existence Farming programs Traditional culture programs Ecological programs
Arrival time (one way)	1.5 hours 3 hours 5 hours
Cost (1 person)	15,000 won (about US\$ 15) 30,000 won (about US\$ 30) 50,000 won (about US\$ 50)

3. Fractional factorial design

Once attributes and levels were determined in conjoint analysis, a profile was designed by combining them. This process is called factorial design, where usually full factorial design method and fractional factorial design method are used. In full factorial design, ideal profile can be designed where the correlation be-

tween parameters becomes 0, but the experimentation using this method is practically almost impossible as there are too many profiles. Therefore, fractional factorial design method is used where only a part of the entire profiles is used. Ten to twenty profiles are generally considered to be appropriate for conjoint design (Huh, 2006). As for the method of presenting the profiles, we used the full profile method that presents and evaluates all the plans, because this method delivers higher prediction validity and renders more similarity to actual purchase circumstance where all the attributes are considered and preferences are determined (Wittink & Cattin, 1989).

TABLE 2. Composition of profile

no.	Obliging service	Facility Convenience	Experience programs	Arrival time (hour)	Cost (₩1,000)
1	Disobliging	Convenience of information facility	Farming programs	1.5	1.5
2	Obliging	Convenience of information facility	Ecological programs	3	5
3	Obliging	Convenience of resting facility	Farming programs	5	1.5
4	Disobliging	Convenience of accommodation facility	Non-existence	3	1.5
5	Obliging	Inconvenient	Farming programs	3	3
6	Disobliging	Convenience of resting facility	Ecological programs	1.5	3
7	Disobliging	Inconvenient	Ecological programs	1.5	1.5
8	Disobliging	Convenience of resting facility	Traditional culture programs	3	1.5
9	Disobliging	Inconvenient	Traditional culture programs	5	5
10	Obliging	Convenience of information facility	Traditional culture programs	1.5	1.5
11	Obliging	Convenience of accommodation facility	Traditional culture programs	1.5	3
12	Obliging	Convenience of accommodation facility	Ecological programs	5	1.5
13	Disobliging	Convenience of information facility	Non-existence	5	3
14	Obliging	Convenience of resting facility	Non-existence	1.5	5
15	Obliging	Inconvenient	Non-existence	1.5	1.5
16	Disobliging	Convenience of accommodation facility	Farming programs	1.5	5

With the full profile method, the number of cases would be 288 ($2 \times 4 \times 4 \times 3 \times 3$). Therefore, we chose to use the fractional factorial method, which produced 16 profiles from 1/18 design using the multiplication of the number of levels (Table 2). Profiles were derived using the orthogonal array method to minimize the correlation between attributes and levels. Generally, ranking and scoring are used for evaluating the preference of profiles by the respondents. Evaluation by rank, however, is very difficult to implement and can cause an increased ratio of respondents with low reliability, although it can rule out duplicated responses. Therefore, we adopted a scoring method in the evaluation of profiles using Likert's scale. However, this method, though it is easier to implement, tends to lead to the centralization of responses deteriorating the power of discrimination. In order to address this problem, we gave investigators a training to let them guide the respondents to produce a wider range of responses. Specifically, 10-point Likert's scale was used for the measurement of the preference of each profile where 1 point refers to the lowest preference and 10 points the highest (Goossen & Langers, 2000; Yun & Im, 2006). Unlike widely used 5-point or 7-point scales, this scaling does not have a mean point, but we chose this scaling system as it is easier to convert to percentage and more reliable data can be captured by collecting more variable values compared with other scales.

4. Determination of sample size

For conjoint analysis, more than 100 respondents have to be surveyed on when segmentation is not necessary, or more than 300-400 respondents when segmentation is necessary (You, 1997; Huh, 2006). As more respondents means less standard error, it is better to involve as many respondents as possible and discard more than 10-20% response data with low reliability (Huh, 2006). We, therefore, decided optimal sample size for segmentation to be maximum 480 responses considering 20% of missing measurable data and low reliability data in the responses. The population in the conjoint analysis is better composed of those respondents who are probable to use the items within the scope of the product or service concerned in near future. Selection of such respondents with purchase intention can be identified either from direct question or by considering their current rate of purchase. In this study, we considered the rate of future

intention to visit rural site for tour, as well as current rate of purchase reflected in the rate of visit, based on the analysis of related data from references. From the average rate 47.6% obtained from the rate of future intention for visit, 51.6% (RRDI, 2004a), and the rate of current rural visit, 43.6% (MFAFF, 2005), we decided the required number of respondents to be at least 1,010.

5. Method of data collection

Investigation was carried out by pre-trained investigators on face-to-face basis. Investigators were allowed to assist the respondents by explaining about the items in the questionnaire when the respondent could not understand the profile. In order to minimize the time-related errors, investigation was performed simultaneously in 5 cities for the period from October 27 (Fri.) until November 2 (Thu), 2006. Cities had been initially selected from wider metropolitan districts, i.e., the capital district, Kangwon province, Chungcheong province, Cholla province and Kyeongsang province. Two medium-sized provincial cities (Chuncheon and Cheonju) and 3 capital or larger cities (Seoul, Busan and Daejeon) were finally selected. More than two public locations in each city were selected to capture the data from a variety of respondents. Respondents were chosen from male and female adults of 20 or more years of age who were economically active. A total of 1,072 questionnaires were collected, of which 1,060 were used in obtaining the results excluding 12 responses with missing measurable data. The number of respondents from each city was 218 (Seoul), 210 (Chuncheon), 203 (Daejeon), 207 (Cheonju) and 222 (Busan).

6. Analysis method used

As the process of final decision making and selection behavior are deduced from the preferences of consumers in conjoint analysis, it is preferable to eliminate the responses with low reliability and form the entire group of respondents with those who have purchase intention so that the selection behavior can be better explained. We, therefore, further eliminated 91 respondents whose reliability was very low and then, by screening the respondents with purchase intention, selected 742 valid responses which were subjected to utility analysis.

In this analysis, part-worth model was used for the attributes of obliging service, experience programs and facility convenience, and vector model was used for arrival time and cost. The minimum value of utility for each attribute was reset to 0 for mutual comparison. K-means clustering is generally used for market segmentation and it is more widely used in clustering the respondents than parameters. 742 respondents were used as subjects in clustering also.

IV. STUDY RESULTS

1. General statistics of respondents

General statistics of respondents showed slightly more males (52.2%) and age groups consisted of 69.5% in their 20s-30s and 27.0% in their 40s-50s. Education and vocation data indicated that 71.7% had higher than high school education and 41.3% were students. Monthly average income and spending on leisure indicated 48.3% in 2-4 million won and 31.6% in 0.2-0.5 million won respectively. Frequency of gender for each investigation site revealed relatively more males (58.3%) in Seoul, more females (54.5%) in Daejeon and more males (55.4%) in Cheonju. In all 5 cities, respondents in their 20s-30s were the most frequent age group and college student was the most frequent vocation. The frequency of monthly average income of 4-6 million was 47.3% in Seoul but more frequency was observed in the income range of 2-4 million won in other cities. Finally, spending on leisure showed the highest frequency of 29.3% in the range of 0.5-1 million won in Seoul while other cities showed more frequency in the range of 0.2-0.5 million won, meaning that the levels of both income and spending on leisure are higher in Seoul than in other cities (Table 3).

TABLE 3. General statistics of respondents: Frequency (%)

		Seoul	Chuncheon	Daejeon	Cheonju	Busan	Total
Gender	Female	90(41.7)	104(49.5)	110(54.5)	92(44.6)	109(49.1)	505(47.8)
	Male	126(58.3)	106(50.5)	92(45.5)	114(55.4)	113(50.9)	549(52.2)
	Total	216(100.0)	210(100.0)	202(100.0)	206(100.0)	222(100.0)	1,056(100.0)
Age**	20-39	148(67.9)	170(81.0)	180(89.4)	107(51.7)	130(58.6)	735(69.5)
	40-59	45(20.6)	38(18.1)	18(9.0)	97(46.9)	88(39.6)	286(27.0)
	Over 60	25(11.5)	2(0.9)	3(1.5)	3(1.4)	4(1.8)	37(3.5)
	Total	218(100.0)	210(100.0)	201(100.0)	207(100.0)	222(100.0)	1,058(100.0)
Education	High School	23(10.8)	40(19.7)	27(13.8)	61(30.7)	69(32.2)	220(21.5)
	Undergraduate	159(75.0)	153(75.4)	156(79.6)	127(63.8)	139(65.0)	734(71.7)
	Graduate	30(14.2)	10(4.9)	13(6.6)	11(5.5)	6(2.8)	70(6.8)
	Total	212(100.0)	203(100.0)	196(100.0)	199(100.0)	214(100.0)	1,024(100.0)
Job*	Student	74(33.9)	115(55.8)	68(34.9)	64(32.8)	102(46.6)	423(41.3)
	Office worker	29(13.3)	14(6.8)	35(17.9)	31(15.9)	26(11.9)	135(13.2)
	Housewife	21(9.6)	22(10.7)	21(10.8)	26(13.3)	28(12.8)	118(11.5)
	Total	208(100.0)	206(100.0)	195(100.0)	195(100.0)	219(100.0)	1,023(100.0)
Monthly average income**	2 million won	10(5.5)	21(13.5)	16(10.4)	12(7.1)	39(18.0)	98(11.2)
	2-4 million won	54(29.7)	80(51.3)	71(46.1)	99(58.9)	120(55.3)	424(48.3)
	4-6 million won	86(47.3)	40(25.6)	40(26.0)	44(26.2)	47(21.7)	256(29.2)
	Over 6 million won	33(18.1)	15(9.6)	27(17.5)	13(7.7)	11(5.1)	99(11.3)
	Total	182(100.0)	156(100.0)	154(100.0)	168(100.0)	217(100.0)	877(100.0)
Monthly average leisure spending**	0.2 million won	24(13.8)	35(23.8)	17(11.8)	17(11.1)	52(27.4)	145(17.9)
	0.2-0.5 million won	49(28.2)	48(32.7)	53(36.8)	52(34.0)	53(27.9)	255(31.6)
	0.5-1 million won	51(29.3)	40(27.2)	37(25.7)	44(28.8)	38(20.0)	210(26.0)
	Over 1 million won	50(28.7)	24(16.3)	37(25.7)	40(26.1)	47(24.7)	198(24.5)
	Total	174(100.0)	147(100.0)	144(100.0)	153(100.0)	190(100.0)	808(100.0)

*: describe just 3

**: describe from open-ended data to category data

2. Importance and utility

The utility analysis on the entire responses resulted in Pearson's R index of 0.986 and Kendall's tau index of 0.917, indicating very high internal validity of the model. These indexes represent a correlation between the preference of each profile and deduced utility value. It is useful for evaluating the internal validity of the model since higher correlation can be interpreted as higher ex-

plaining power of deduced utility. The value of the constant represents average preference of the profile concerned and was uniformly distributed close to 6.5. Importance of each attribute revealed 24-26% in experience programs, facility convenience and obliging service while the importance of arrival time and cost were 11-14% (Table 4). These results can be interpreted as that city dwellers who have intention to visit rural sites, i.e. potential consumers, consider farming, traditional culture, natural ecology related experience programs, resting and accommodation, convenience of information services, obliging services of local residents as important attributes for site choice. However, arrival time and cost, which are usually considered as important parameters in other tourism and leisure activities, were shown to have not so much importance in the rural site choice. This is because, unlike ordinary tourist's behavior, the city dwellers who intend to visit rural sites tend to actively enjoy unique experiences that can not be had in urban settings. Also, the city dwellers who have intention to visit rural sites still consider obliging service and facility convenience as important attributes as they expect in other tourist destinations.

TABLE 4. Conjoint analysis results (n=742)

Attributes	Levels	Averaged Importance	Utility
Obliging service	Obliging	24.41	2.1460
	Disobliging		0.0000
Facility Convenience	Inconvenient	24.40	0.0000
	Convenience of accommodation facility		1.3749
	Convenience of information facility		1.4178
	Convenience of resting facility		1.0716
Experience programs	Non-existence	26.22	0.0000
	Farming programs		0.5032
	Traditional culture programs		1.5251
	Ecological programs		0.9013
Arrival time (one way)	1.5 hour	13.81	0.9531
	3 hour		0.4766
	5 hour		0(B=-0.4766)
Cost (1 person)	15,000 won (about US\$ 15)	11.16	0.6439
	30,000 won (about US\$ 30)		0.3219
	50,000 won (about US\$ 50)		0(B=-0.3219)
CONSTANT			6.5776

Pearson's R = .986 Significance = .000

Kendall's tau = .917 Significance = .000

3. Market segmentation

1) Determination of optimal number of clusters

K-means cluster method requires determination of the number of clusters, where the number should be less than the number of observation subjects. As utility for each respondent has been determined for 5 attributes in this study, we initially set the number of clusters to 3, 4 and 5 and performed cluster analysis for each. Then we decided the final number of clusters by comprehensively considering (1) significance level for each parameter from ANOVA, (2) number of respondents for each cluster, and (3) appropriateness of Euclidean distance value of each cluster.

Analysis of significance level for each parameter resulted in significance level of 0.655 and 0.121 respectively for arrival time and cost in the case of 3 clusters, so it was initially eliminated. The analysis of the number of respondents in each cluster performed next revealed a significantly smaller cluster of 51 respondents compared with other clusters in the case of 5 clusters. Euclidean distance value was 2.11-2.72 for 3 clusters setting, 1.98-3.39 for 4 clusters setting, and 1.82-4.47 for 5 clusters setting indicating that distance value, error in other words, increases as the number of cluster increases. Therefore,

TABLE 5. Significance level for each cluster

Attributes	Levels	Cluster 3		Cluster 4		Cluster 5	
		F	sig.	F	sig.	F	sig.
Obliging service	Obliging	378.689	0.000	363.17	0.000	271.504	0.000
	Disobliging	378.689	0.000	363.17	0.000	271.504	0.000
Facility Convenience	Inconvenient	183.748	0.000	146.63	0.000	102.122	0.000
	Convenience of accommodation facility	33.515	0.000	35.006	0.000	19.796	0.000
	Convenience of information facility	59.943	0.000	44.791	0.000	45.791	0.000
	Convenience of resting facility	26.183	0.000	19.633	0.000	17.628	0.000
Experience programs	Non-existence	260.369	0.000	197.57	0.000	156.623	0.000
	Farming programs	14.332	0.000	26.365	0.000	46.743	0.000
	Traditional culture programs	188.240	0.000	163.87	0.000	176.824	0.000
	Ecological programs	59.314	0.000	56.909	0.000	44.195	0.000
Arrival time (one way)		0.424	0.655*	24.345	0.000	28.840	0.000
Cost (1 person)		2.116	0.121*	4.167	0.006	15.031	0.000

*: $p > 0.05$

based on the result of the analysis of Euclidean distance value, the 5 clusters setting was also eliminated since it showed less balancing number of respondents in each cluster and larger error of distance value. We, therefore, finally chose 4 clusters and calculated the final median value of the clusters by repeatedly applying the initial value 10 times (Table 5).

2) Cluster analysis using utility

First, Cluster 1 (facility, program orientated group) can be regarded as the group of respondents who consider experience programs and facilities convenience as most important attributes when they visit rural sites. This group shows stronger awareness of the convenience of facilities than other groups and prefers traditional culture experience and natural ecology most among other experience programs. Information facility leading up to the site was the most preferred facility by them followed by accommodation and resting facilities (Table 6). Therefore, the respondents in this group can be characterized as the ones whose purpose of visit is not only to seek leisure but to actively participate in experience programs as well. However, they did not show significant difference in their consideration of arrival time and cost, which means that they would probably be willing to visit the site regardless of arrival time and cost as long as the site offers excellent facilities and programs. The respondents in this group are expected to hesitate to visit the site or show low level of satisfaction even if they do if the site does not offer special local experience programs or convenient facilities despite excellent scenery and natural environment.

Second, Cluster 2 (service orientated group) showed relatively lower preference of facility convenience and experience programs than Cluster 1, but more strongly considers obliging service as the important attribute than other clusters. Therefore, the respondents in this group can be defined as the ones who consider the interaction with local people most important for their rural visit and make visit decision based on the quality of obliging service of the local residents. They showed less preference of facility convenience attribute but relatively more preference of accommodation than the Cluster 1, indicating that they are likely to be the visitors of longer stay for more than a half day or even overnight. Although they showed less preference of experience programs, they showed most preference of experience traditional culture and are not much restricted by arrival time and cost (Table 6). The respondents in this cluster

consider the maintenance of relation with local residents most important and will be least satisfied if local residents provide unkind or disobliging service.

Third, the Cluster 3 (time orientated group) showed less preference of obliging service, facility convenience and experience programs, but they are most sensitive to arrival time and least sensitive to cost. The respondents in this group showed a strong negative correlation with the time taken to arrive at the destination while they least consider cost as an important attribute (Table 6). They most prefer traditional culture experience, though relatively less than the Cluster 1, but they consider facility convenience most important as they are sensitive to time. They can also be described as the least sensitive group to the disobliging service of local residents and facility inconvenience. Therefore, the respondents in Cluster 3 are most probable to visit the site near to their residence for the purpose of leisure than interaction with local people and show passive behavior in their appreciation of surrounding scenery.

TABLE 6. Cluster analysis results (n=742)

Attributes	Levels	Cluster 1	Cluster 2	Cluster 3	Cluster 4
Obliging service	Obliging	1.13	2.02	0.78	0.18
	Disobliging	-1.13	-2.02	-0.78	-0.18
Facility Convenience	Inconvenient	-1.73	-0.82	-0.95	-0.05
	Convenience of accommodation facility	0.61	0.53	0.44	-0.12
	Convenience of information facility	0.74	0.25	0.63	0.00
	Convenience of resting facility	0.38	0.04	-0.12	0.17
Experience programs	Non-existence	-1.79	-0.37	-0.40	-0.18
	Farming programs	-0.27	-0.14	-0.51	0.18
	Traditional culture programs	1.41	0.56	1.06	-0.25
	Ecological programs	0.66	-0.05	-0.14	0.25
Arrival time (one way)		-0.36	-0.30	-0.78	-0.38
Cost (1 person)		-0.43	-0.32	-0.23	-0.32

Cluster 1: facility, program orientated group

Cluster 2: service orientated group

Cluster 3: time orientated group

Cluster 4: simple participants

Fourth, Cluster 4 (simple participants) can be described as the group of simple participants or observers, pairs, group visitors, or passers-by to whom obliging service, facility convenience and experience programs are of almost no or least concern. They are the group of people who have no right in the making of a decision on a rural visit or as to which site they are to visit or, even though they did participate in the decision, they show negative attitude during the visit. The respondents in this group prefer resting facilities most, though less than other groups. They showed preference of experiencing natural ecology and farming among other experience programs. This group considers arrival time and cost almost with equal importance as similar to other groups (Table 6). Most of the respondents in this group are the ones who are group visitors or passers-by staying for a short period of time before they leave for the next destination. They are likely to have little interest in the visiting site or had almost no advance information on the site. Therefore, it is important to induce them to actively participate in the local programs and to continuously provide local information through various media.

3) Characteristics of respondents in each cluster

In this study, we analyzed the attributes in making the choice of rural site for each cluster of respondents and characteristics of the respondents in each cluster. Within the respondents in Cluster 1 who valued facility convenience and experience programs, the frequency of those who had the experience of living in rural area was 58.4% and the frequency of those who had relatives in rural area was 87.1%, indicating that this cluster has highest rural connection. This group also showed highest 84.6% frequency of past rural visit experience. In Cluster 2, the frequency of those who did not have the experience of living in rural area was 51.1%, which is higher than those who did, thus this group had least rural connection. Frequency of female in Cluster 1 was 55.9% which is relatively high. In other clusters, male frequency was higher. The service-orientated Cluster 2 and time-orientated Cluster 3 showed low average age of 31.3 and 31.5 respectively. Average age in Cluster 4 was higher, indicating that people tend to show more negative attitude as they are older. Frequency of students was higher in Clusters 2 and 3 while the frequency of company employees was higher in Cluster 2 and the frequency of technical workers in Cluster 3.

To summarize based on the items of higher frequency in each cluster;

facility convenience and experience programs were important to Cluster 1 whose constituents are active participants with high rural connection and more past experiences. They have a more frequency of females and are comparatively younger and have relatively lower income; respondents in Cluster 2 are service orientated and have a more frequency of young males without rural living experience. Most of them were students or company employees; respondents in time-orientated Cluster 3 have had rural connection and experience of visits but they were younger and likely to be males with higher income; Cluster 4 consisted mostly of males of higher age with high income and leisure spending but without rural connection or visit experience.

V . CONCLUSION

The major contents of this study are the analysis of choice attributes from the consumers' perspective in the selection of rural sites by city dwellers as tourists, as part of the rural development planning process. The results of analysis revealed high level of importance of experience programs, facility convenience and obliging service, but arrival time and cost were considered to be less important. The analysis of utility for the levels of each attribute indicated relatively higher utility of kindness, information facilities, accommodation facilities and traditional culture experience programs. Market segmentation resulted in classification of the respondents into 4 clusters: facility/program-orientated group, service-orientated group, time-orientated group, and simple participants. This study is meaningful in that its results led to the identification of choice attributes that city dwellers consider most important when they visit rural sites. We believe that these results would be able to contribute to the rural planning in the process of selecting the target markets suitable for the local setting and establishing marketing strategies aimed at target markets and, ultimately, to the diversification and differentiation of rural resources.

However, this study has limitations and poses questions as follows: First, studies using conjoint model use investigation by selecting a limited number of attributes and levels because of difficulty in designing and conducting the investigation, which may be a major factor for not being able to perfectly represent the choice characteristics of actual market. Second, the difficulty of

conjoint investigation for the analysis of the attributes of rural site choice by city dwellers limited us to investigate over a wider range of age groups. It is because the responses from most of the respondents of over 50 years of age had to be excluded from the final analysis as they gave up providing the answers, or just did not provide answers, or, even if they did, their answers were not reliable as they gave them without fully understanding the questions. Third, the analysis of the attributes of rural site choice by city dwellers who had intention of rural visit produced low importance of arrival time unlike previous studies. This may be because we translated the arrival time into one-way travel in the design of the experiment. Therefore, future studies on choice attributes should consider comprehensive attributes including those related to scenery, visits to the surrounding tourist locations and local food quality. Also, it is necessary to develop investigation methods over a wide range of subjects by simplifying the design of experiment. The use of questionnaire with an improved layout of attributes and levels for easy understanding by respondents, thorough training of investigators, and provision of more comprehensible profiles and images may be some of the methods that can be employed.

References

- Cho, S. K. and Shin, C. O. 2005. A conjoint analysis to the economic benefits of improved water quality of Han river. *Environmental and Resource Economics Review*, 14(3): 655-672.
- Dellaert, B., A. Borgers, and H. Timmermans. 1995. A day in the city: using conjoint choice experiments to model urban tourists' choice of activity packages. *Tourism Management*, 16(5), 347-353.
- Fleischer, A. and A. Tchetchik. 2005. Does rural tourism benefit from agriculture? *Tourism Management*, 26, 493-501.
- Goossen, M. and F. Langers. 2000. Assessing quality of rural areas in the Netherlands: finding the most important indicators for recreation. *Landscape and Urban Planning*, 46, 241-251.
- Green, P. E. and V. Srinivasan. 1978. Conjoint analysis in consumer research: issue and outlook. *Journal of Consumer Research*, 5, 103-123.
- Green, P. E. and V. Srinivasan. 1990. Conjoint analysis in marketing: new developments with implications for research and practice. *Journal of Marketing*, 54, 3-19.
- Hong, S. G. 2000. A study on the theme park users' choice behavior: application of conjoint choice model. *Journal of the Korean Institute of Landscape Architecture*,

- 28(1): 19-28.
- Hong, S., S. Kim and J. Kim. 2003. Implications of potential green tourism development. *Annals of Tourism Research*, 30(2): 323-341.
- Huh, M. H. 2006. *SPSS Conjoint Analysis*. Seoul: Korea SPSS.
- Kelly, J., W. Haider, P. W. Williams, and K. Englund. 2007. Stated preferences of tourists for eco-efficient destination planning options. *Tourism Management* (in press).
- Kim, N. J. 2004. Policy orientations for rural tourism: a consideration of the rural amenity concept and components of tourism phenomenon. *Journal of the Tourism Science*, 28(1): 263-281.
- Kim, S. H. 2003. *Economics of Tourism and Outdoor Recreation*. Seoul: Baeksan Publishing Co.
- Kim, S. J. and Ahn, G. Y. 1995. Modeling consumers' park choice behavior: review & applications of choice theory and model. *Journal of the Korean Institute of Landscape Architecture*, 23(3): 59-68.
- Kim, H. and Lee, H. C. 2004. Modeling-demand on rural tourism. *Journal of the Tourism Science*, 19(2): 131-146.
- Kotri, A. 2006. Analyzing customer value using conjoint analysis: the example of packaging company. *Faculty of Economics & Business Administration Working Paper Series* 46: 3-33.
- KREI (Korea Rural Economic Institute). 2005. *Strategy of Rural Tourism Demand*. Seoul: KREI.
- MFAFF (Ministry for Food, Agriculture, Forestry and Fishery). 2003. *Growth of Rural Tourism in Korea*. Gwacheon: MFAFF.
- MFAFF (Ministry for Food, Agriculture, Forestry and Fishery). 2005. *Development of the Demand Forecasting Model of Rural Tourism*. Gwacheon: MFAFF.
- Mazanec, J. A. 2001. Tourists' acceptance of Euro pricing: conjoint measurement with random coefficients. *Tourism Management*, 23: 245-253.
- McGehee, N. G., K. Kim, and G. R. Jennings. 2007. Gender and motivation for agri-tourism entrepreneurship. *Tourism Management*, 28: 280-289.
- Murphy, A. and P. W. Williams. 1999. Attracting Japanese tourists into the rural hinterland: implications for rural development and planning. *Tourism Management*, 20: 487- 499.
- OECD. 2000. *Valuing Rural Amenities*. Paris: OECD.
- Pina, I. P. A. and M. T. D. Delfa. 2005. Rural tourism demand by type of accommodation. *Tourism Management*, 26: 951-959.
- RRDI (Rural Resources Development Institute). 2003. *Realities and Preference of Green Tourism*. Suwon: RDA NIAST.
- RRDI (Rural Resources Development Institute). 2004a. *Research & Consulting Program of Rural Tourism*. Suwon: RDA NIAST.

- RRDI (Rural Resources Development Institute). 2004b. *Value Evaluation of Environmental Resources for Sustainable Rural Development*. Suwon: RDA NIAST.
- Sharpley, R. 2002. Rural tourism and the challenge of tourism diversification: the case of Cyprus. *Tourism Management*, 23: 233-244.
- Suh, Y. K. and L. McAvoy. 2005. Preferences and trip expenditures: a conjoint analysis of visitors to Seoul, Korea. *Tourism Management*, 26: 325-333.
- Unwin, T. 1996. Tourist development in Estonia: images, sustainability and integrated rural development. *Tourism Management*, 4: 265-276.
- UNWTO. 2006. *Updating Tourism Statistics International Standards: First Set of Changes and Amendments*. Madrid: UNWTO.
- Wittink, D. R. and P. Cattin. 1989. Commercial use of conjoint analysis: an update. *Journal of Marketing*, 53: 91-96.
- You, P. H. 1997. *Modern Marketing Science*. Seoul: Byubmunsa.
- Yun, H. J. and Kim, H. M. 2006. Evaluating the value of environment-friendly agricultural landscapes using CRM. *Journal of the Korean Institute of Landscape Architecture*, 34(1): 37-47.
- Yun, H. J. and Im, S. B. 2006. A Study on the multi-sensory preferences and image influences of outdoor leisure spaces. *Journal of the Korean Institute of Landscape Architecture*, 34(3): 23-31.
- <<http://www.go.2vil.org>>.

Date Submitted: May 14, 2009 Period of Review: May 25~Jun. 19, 2009
--