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**Strategies for Managing Perceived Crowding in Tourist Destinations:  
A Case of a Buddhist Temple Site in Korea**

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**ABSTRACT**

This study examined the preference of the methods of rationing users and admission fees for the perceived crowding at a traditional Buddhist temple visit in Korea. Data were collected through a survey of 210 participants who visited a traditional Buddhist temple, a popular tourist destination located in South Korea. Between-Groups Experimental Design was utilized to collect the data. One-way ANOVA, two-way ANOVA (3×8 factorial design), and multiple regression were used to analyze the data. The study found that the group who preferred the increased price tended to perceive crowding, leisure conflict, and willingness to pay extra fees.

**Keywords:** rationing users, admission fee, perceived crowding

**JEL Classifications:** M1, M3

## **Strategies for Managing Perceived Crowding in Tourist Destinations: A Case of a Buddhist Temple Site in Korea**

### **1. Introduction**

One of the most serious problems of the world's most popular tourist destinations is overcrowding, which happens when the number of visitors exceeds a destination's capacity (Mehta, 2013). The US National Park Service, historic sites, and cultural heritage attractions all suffer from overcrowding (Alegre & Garau, 2010). Overcrowding leads to tourist dissatisfaction (Alegre & Garau, 2010; Alexandros & Jaffry, 2005). Tourists want to enjoy their time in natural environments. However, if temporal and spatial dispersion of users is ineffective, tourists cannot satisfy the purpose of their visit. Furthermore, tourists' satisfaction with the destination would be diminished, thereby negatively affecting their intention to revisit (Kozak & Rimmington, 2000; Shin, Kwon, & Hahn, 2007). To make matters worse, if the tourist destination site raises admission fees to provide a more rewarding experience to fewer visitors, tourists might still complain about the cost, believing that they are being deprived of the chance to enjoy themselves. At worst, visitors might take out their frustration on the site itself by treating it with disrespect or vandalizing it. Previous studies have identified that the perceived lack of fairness in one's social environment arrangement can cause vandalism (Demore, Fisher, & Baron, 1988; Fisher & Baron, 1982). In addition, the tourist destination such as a national park should be limited to access without changing the experience. The environment's natural resources will be depleted by intensive use. Consequently, the disparity between supply and demand will increase (Kim, Cho, & Park, 2002). If the number of tourists continues to rise, destinations that promise a quiet and natural environment (such as a Buddhist temple) will become more akin to popular beach resorts and amusement parks.

The influence of perceived crowding on visitors' satisfaction has been debated by several studies (Manning, 1986; Shelby & Herberlein, 1986). Nevertheless, little is known about the relationship between perceived crowding based on a destination's carrying capacity and visitors' satisfaction (Hong, 2007). Therefore, new methods of protecting the quality of tourist experiences and managing resources were investigated, with special attention to carrying capacity, Limit of Acceptable Change (LAC), and Visitor Impact Management (Stankey & McCool, 1989). In 2008, an admission fee for the urban areas adjacent to South Korea's National Parks was waived, so that the pattern of visitation has been heavily concentrated in a specific time period and location. When the number of visits exceeds the carrying capacity, natural resources will be depleted and visitors will be dissatisfied. With little or no growth in the availability of natural resources, admission fees, reservations, a lottery, and first-come, first-served strategies were attempted to alleviate the pressure on the parks and the natural resources. This strategy is called rationing users and Hammitt and Cole (1998) identified several ways of rationing users: first-come, first-served, reservation, lottery, double pricing (extra charge and discount), and price adjustment in the less crowded areas to meet the demand (Hammitt & Cole, 1998; Manning, 2004; Perterson, 1980).

These methods of temporal and spatial dispersion are related to the supply side (management entity) of rationing users. On the demand side (tourists) there are also strategies to reduce crowding (Hong & Han, 2004; Kim & Hong, 1998; McCool & Utter, 1981). Tourists can avoid crowds by choosing alternative locations, going to the site early or late in the season, and

visiting secluded or isolated areas (Hall & Shelby, 2000). Other coping behaviors are site displacement (Schneider, 2007), product shift, rationalization, and tolerance.

The relationships between perceived overcrowding and satisfaction, between carrying capacity and expectation, between experience and management preference and usage avoidance methods have previously been assessed (Alexandros & Jaffry, 2005; Cole & Hall, 2008, 2009; Kuentzel & Heberlein, 1992; Kim & Lee, 2010; Strother & Vogelson, 2003). However, no studies to date have investigated a relationship between rationing users and adjusting admission fees with respects to the tourists' preference. Furthermore, admission fees can be investigated to reduce the tourist pressure on some sites. For instance, willingness to pay the fees based on social norm, place attachment, and a leisure purpose to avoid leisure conflicts with other visitors are used to collect the fees. Tolerance levels are another important component when implementing the fees. Prior expectations for popular tourist destinations, which are known as typical crowded locations, can significantly influence their tolerance levels (accepted as a crowded area: rationalization).

Therefore, this study examines the rationing users and changes in admission fees at a crowded traditional Buddhist temple site in Korea. In addition, the four objectives of the study are 1) to identify differences among three variables (rationing users, leisure conflicts, and willingness to pay extra fees); 2) to identify differences in preference between rationing users (reservation, first-come, first-served, and lottery) and admission fees; 3) to examine tourists' coping behaviors based on their perception of crowding; and 4) to analyze the impact of several variables on tourists' willingness to pay extra fees to avoid crowds.

## **2. Literature Review**

### **2.1 Rationing users to avoid crowds**

Early studies (Wagar, 1964) of perceived crowding in a natural park made a distinction between density and crowding. Studies found an inverse relationship between crowding and satisfaction (Manning, 1986; Wagar, 1964). In the 1970s, the studies focused on the relationship between density and satisfaction based on a site's carrying capacity (Hong, 2007; Lucas, 1964, 1980). Complexity of measuring and applying carrying capacity became an important research topic. By the 1990s, a social psychological approach based on visitors' experience emerged. Factors that contributed to the perception of crowding (such as density, frequency of visits, tourists' personal preferences and expectations, and surrounding conditions) received the most attention from researchers. Along with this trend, studies related to expectancy theory, social norms, behavior adjustment, and tolerance appeared (Hong, 2007). The new trend drew significant attention to the importance of social carrying capacity (i.e., coping behavior, perceived crowding and adaptation, and crowding norm.).

To establish social carrying capacity and acceptable limits for changes, the outdoor site managers needed to determine the maximum amount of use that would not damage the natural environment. Numerous scholars attempted to identify the problems and challenges of carrying capacity (Lee, 2000). These studies suggested that park managers be aware of the effect of use (not of visitors) on natural resources. According to the Cole's model (1982), in order to maintain acceptable impact, two management strategies were identified: spatial concentration of use and use dispersal. The former can be applied, for instance at campsites. Campers are typically required to camp only on designated sites, to protect wilderness areas, particularly heavily used ones. Use dispersal can be applied to lightly used areas. Increasing distances among campers can minimize environmental harm.

There are many reasons to impose limitations on use. Many visitors who wish to preserve the ecology of natural parks support establishing such limits (Shelby, Vaske, & Donnelly, 1996). The social norms, however, is only speculation. The reliance on social norms to establish the use limits would be controversial. The establishment of use limits is a subjective decision. Therefore, they should be determined by management only after considering stakeholders' opinions. This decision can be determined by the condition of natural resources, visitors' opinions, and the consequences of alternatives (Hammitt & Cole, 1998).

The use limits, however, can lead to the difficulty of balancing resource management and provision of equal opportunities for enjoyment. The use limits are justified only in the absence of alternatives. According to numerous analyses, the use limits must be applied when the acceptable capacity has been exceeded. For instance, at a damaged location, use should be minimized until the location has recovered (Park, 2005). The controversy over use limits concerns when and how to apply them. Visitors tend to support the use limits only if they are necessary to conserve resources (McCool & Christensen, 1996). Therefore, the use limits at highly used areas can prevent overcrowding but not its ecological effects.

Once the use limits have been applied, the next issue is how to limit the number of users. When the availability of public resources is limited, the distribution of the resources will be allocated with methods such as price adjustment, reservation, lottery, first-come, first-served, and merit (Kim, 2000; Manning, 2004; Peterson, 1980; Stankey & Baden, 1977). For instance, wilderness permits can be obtained from the reservation systems and walk in on a first-come, first-served basis as long as the permits are available. Once the acceptable carrying capacity has been reached, the Park Service stops admitting visitors. For instance, Yosemite National Park fully utilizes the permit system. Permits can be requested in advance through some sort of a reservation system. Permits to wilderness camp can be reserved through a reservation service (National Park Service, 2014). Alternatively, permits can be issued to visitors on a first-come, first-served basis until 11:00 a.m. Once maximum carrying capacity is reached (60 percent from reservation and 40 percent from first-come first-served), additional visitors must be turned away or directed to less popular trails (National Park Service, 2014).

When visitors' demands exceed the admission quota, a lottery system is possible (Dawson & Hendee, 2009). A lottery is used to distribute big-game hunting permits (Manning, 2004). The participants submit applications with their preferred dates. The applications are then randomly drawn from the pool (Dawson & Hendee, 2009; Manning, 2004). However, Peterson's study (1980) found that 80 percent of the respondents rejected the lottery system. The merit system is another way of rationing users. It requires users to meet special prerequisites in order to have access to the destination (Stankey & Baden, 1977). An entry quota is an inefficient method of controlling use. The level of use at an inner spot can be influenced by both the number of users in the area and the location of their campsite. The pattern of rationing use can be consistent and predictable (Stankey & Baden, 1977). Therefore, allocation of visitor numbers can be applied at the entrance of the trail (van Wagtenonk & Coho, 1986). This method of rationing can restrict visitors' choice of destination.

Visitors tend to choose the rationing method that is most familiar to them. The lottery is the least popular choice (Stankey & Baden, 1977). However, while park managers favor a lottery system, neither group favors a system based on price. Permit method can be used for preparing crowds. For instance, permit method in Forest Service Wilderness can obtain the size of a group, where visitors live, main mode of travel, and the location and date of entry and exit from prospective users. This method can give a rough idea of the visitor's travel route even though park

administration cannot control over the visitors' intention to change their itinerary (Queen, Freidmund, & Peel, 1998).

Entry quotas are not as efficient as fixed itineraries in controlling use at popular interior locations. Interior use levels are affected by how many visitors enter the area, the routes they travel, and the locations at which they choose to camp within limits of the area. However, use distribution patterns are consistent and predictable. Therefore, it is possible to devise trailhead quotas that keep use levels at interior locations close to desired levels (van Wagendonk & Coho 1986). Although it is less efficient, rationing gives visitors the freedom to move around as they please and change their routes and activities at will. Price adjustments are one of the most effective ways to manage demand indirectly. Price increases are commonly used to limit demand. The price increases will place lower-income visitors at a disadvantage and raise the controversial issue of social equity (Park, 2005).

In sum, reducing the demand of users to control crowds is appropriate when the crowding causes overuse at a natural park or at a cultural heritage site like a traditional Buddhist temple. However, use limits tend to conflict with the purposes of management and with visitors' relaxation and enjoyment. The use limits can be justified only if there is no other way to discourage demand.

## **2.2 Coping behaviors for perceived crowding**

Previous studies of tourists' reactions to perceived crowding focus on the process of gaining satisfaction through spatial and temporal behaviors (Heberlein & Shelby, 1977; Manning & Ciali, 1980; Stankey, 1979). According to Hong (2007), responses to crowded conditions include site displacement (Anderson & Brown, 1984), product shift, rationalization, and tolerance (Hall & Cole, 2007). He identified the reactive mechanism between crowds and conflict. These types of research are related to coping behaviors, which are rooted to a psychological theory.

Visitors' changes in cognitive coping depend on the perception of crowding—the condition of being psychologically unbalanced—and they attempted to recover a sense of balance by leaving the area or displacement. Under the condition of user concentration at a limited space, visitors tend to establish an imaginary spatial territory to minimize direct contact from other visitors and then attempt to keep the established space from being invaded (Moon & Moon, 2007).

Users' dissatisfaction increases with density (Jo, 2004). In response, the users tend to move to a less crowded area (Clark, Hendee, & Campbell, 2009). The results, studied from river rafting participants at the Colorado River, indicated that visitors changed the area due to user density (Hong, 2007). Becker (1981) describes site displacement behavior as a process of invasion and succession under the inability to accept the use levels. This site displacement behavior explained the actions of visitors who were dissatisfied with the rise in the use levels of the areas, upon which they move on to a less used and crowded area or left the site altogether (Stankey, 1979).

Visitors choose the reactive alternative through spatial and temporal site displacement to avoid dissatisfaction (Cole, 2012; Hall & Cole, 2007; Hall & Shelby, 2000; Johnson & Dawson, 2004; Leung & Marion, 1999; Manning, 1999). When tourists encounter more people than they can tolerate, they resort to choose spatial and temporal site displacement. They either attempt to find another setting or visit at a different time. The spatial site displacement can intra-site (within an area) or inter-site (from one area to another). Visitors at a natural park tend to move to a more secluded place (Kuentzel & Heberlein, 1992).

The product shift indicates that when visitors cannot meet their original expectations, they reframe their experiences accordingly. McCool and Utter (1981) identified canoe users at a rapid who redefined their expectations of encounters with other users instead of leaving the area. Another way of coping with crowding is rationalization rooted in cognitive dissonance theory (Festinger, 1957; Heider, 1958). An individual's rationalization stems from cognitive efforts to reevaluate or correct his or her expectations more positively. Such efforts are voluntary and freely chosen to maintain satisfaction. Hoss and Brunson (2000) indicated that 50 percent of wilderness visitors who encountered an unwanted circumstance on their trip rationalized their experience.

In conclusion, coping behaviors for perceived crowding attempted to identify the relationship between crowds and satisfaction, as well as to improve visitors' satisfaction levels with coping mechanisms. This study needs to examine tourists' preferences in the consideration of both rationing users and change of admission fees as methods of dispersing visitors at an overcrowded traditional Buddhist temple. The ways in which the visitors make accommodation to maintain satisfaction with the site need to be identified.

### **2.3 Development of hypotheses**

This study empirically investigates the preferred ways of rationing users and the types of admission fees that can reduce crowds at a Buddhist temple. Visitors who support price increase will accept them only when they feel too crowded, even if it increases their financial burdens. It is expected that the lottery system will have a higher score than reservation and first-come, first-served policies (McCool & Christensen, 1996; Stankey & Baden, 1977). The groups of visitors who prefer the reservation and first-come, first-served policies will receive a lower score on perceived crowding and leisure conflicts (van Wagtenonk & Coho, 1986).

There also appears to be a difference in preference between rationing users (reservation, first-come, first-served, and lottery system) and admission fees. The three groups of rationing users are identical to the previous hypothesis—when various preferences of admission fees are provided, the visitors tend to prefer the pricing saving option (Kamen & Robert, 1970). Tourists were likely to accept the double pricing option (discount benefit, slow season discount, discount for alternative location) (Harris & Driver, 1987). The price increase was unpopular with visitors because it added to the cost of travel (Emery, 1970; Gardner, 1971; Kamen & Robert, 1970). If other alternative destinations that have a price advantage are available, tourists have more options. Consequently, they preferred this choice to the price increase (Walsh, 1986).

This study identifies a difference in tourists' coping behaviors based on their levels of perceived crowding. Tourists have a tendency towards spatial and temporal displacement when they observe very crowded situations and have undesired encounters with other visitors. As a result, tourists look for alternative sites and adjust their visiting time. In contrast, tourists who observe less crowds tend to be less likely to choose site displacement (i.e. less likely to choose both inter- and intra-site displacement). Therefore, the group that feels the most perceived crowding tends to leave the site in order to restore their psychological balance (Moon & Moon, 2007).

The purpose of this study is to analyze the impact of several variables for crowding prevention (perceived crowding, previous expectation of crowding, reduction of pleasure for Buddhist temple visits, clean temple visits, place attachment, leisure conflict [reduction of pleasure], and other tourists' inappropriate etiquette) on tourists' willingness to pay extra fees. The proposed hypotheses are as follows:



*H1: There is a difference in preference of methods of rationing users on perceived crowding, leisure conflicts, and willingness to pay extra fees.*

*H2: There is a difference in preference of rationing users (reservation, first-come, first-served, and lottery) and types of admission fees.*

*H3: There is a difference in tourists' coping behaviors based on their levels of perceived crowding (high, medium, and low).*

*H4: Different variables for crowding prevention will impact tourists' willingness to pay extra fees.*

### **3. Method**

#### **3.1 Study instrument and measurement**

This study's method of rationing users consisted of allowed number for allocation and dispersion (McCool & Christensen, 1996), increased admission fees, and price discount. This study used a 7-point Likert scale to measure the users' rationing preferences. A respondent indicate the level of their agreement from 1 to 7 where 1 represents Very Unlikely while 7 indicates Very Likely.

Hypothesis 1 included first-come, first-served, reservation, lottery, and price increase (Hammit & Cole, 1998). Perceived crowding, leisure conflict, and willingness to pay extra fees were measured using the 7-point Likert scale.

Hypothesis 2 consisted of two variables that constitute the methods of rationing users (type I: first-come, first-served, type II: reservation, and type III: lottery) and types of admission fees (type I: price increase, type II: price increment in a busy season, type III: price discount in a slow season, type IV: price increase at a special area, type V: reduction in the number of convenient facilities, type VI: price discount of an alternative location, type VII: double pricing, and type VIII: elimination of group discount). Participants were shown a scenario card for two minutes and completed the survey questionnaire about their preferred ways of preventing crowds at a traditional Buddhist temple.

Hypothesis 3 was based on the tourists' levels of perceived crowding (coping behaviors included keeping spatial distance from other visitors), spatial avoidance (choosing other routes to avoid the crowds), temporal dispersion (visiting the site at an uncrowded time), rationalization (believing that there is no choice because the site is always crowded), tolerance (can endure the crowds at a Buddhist temple). The 7-point Likert scale was used to measure these variables.

The influential variables in hypothesis 4 consisted of a perceived crowding domain (crowds, too many other people, and too crowded), expectation of crowding (expectation for enjoying temple experience and nature, expectation for a Buddhist temple as a relaxing place, and expectation for a Buddhist temple as a crowded location), reducing the pleasure of the temple visit (decreasing pleasure), purpose of clean temple visit (clean temple visit and experience for emotional rest), place attachment (highly attached to temple and meaningful location), leisure conflicts (inconvenience, interruptions, and stress), and social etiquette (dust, noise, not staying on the pathway). All of these items were measured on a 7-point Likert scale.

This study used 24 scenario cards. Each card was made with 24 font-size in Korean on white paper and bound and laminated copy. Each participant was exposed to six scenarios. The

method of rationing users and types of admission fee were prepared in the same condition. This survey was tested through a pilot study of university students who evaluated its readability. Based on the results of the pilot study, the survey could proceed.

### **3.2 Study site and data collection**

Data were collected from visitors at the Bulguksa Temple, one of the most famous traditional Buddhist temples and cultural heritage sites in South Korea. Convenience sampling was used. If the visitors came as a family, researchers randomly chose one member. The survey was collected at a busy time of day (between 10:00 a.m. and noon and from 2:00 p.m. to 4:00 p.m.). Two hundred and fifty survey questionnaires were distributed and 210 were returned (84% completed rate).

Bulguksa Temple is located in Toam National Park, Kyungbuk province, South Korea and listed as an outstanding universal value by UNESCO (United Nations Educational, Scientific and Cultural Organization). However, 20% of tourists who visit the Kyungju area choose this destination, making it very crowded. The spring (cherry blossom season) is when the temple's peak season. The admissions fee (4,000 Korean Won or US \$4.00) is a little more expensive than other destinations. Therefore, this location is an ideal setting to investigate perceived crowding and preference for admission fees. The Bulguksa Temple administration granted permission to conduct the study, and the study participants agreed to the survey. When a respondent completed and returned the survey, the researcher provided him or her with a bottle of water (500 ml) as a reward. Participants were recruited in the vicinity of the Temple.

### **3.3 Data analysis**

This study used analysis of variance (ANOVA) to identify the preference for rationing methods and perceived crowding, leisure conflict, and willingness to pay extra fees. A repeated measure of  $3 \times 8$  factorial analysis was designed. Two-way analysis of variance with Scheffe test was used to identify a main effect, and one-way analysis of variance was used to identify the differences in coping behaviors for perceived crowding. Multiple regression was used to identify the influence on preference of prevention of perceived crowding with respects to increased admission fees. All data were analyzed with SPSS 19.

## **4. Results**

### **4.1 Socio-demographic profile**

As displayed in Table 1, one hundred and four males (49.5%) and 106 females (50.5%) completed the survey. Ninety (42.9%) were between the ages of 31 and 39 and 63.3% had completed their bachelor's degrees. One hundred and fifty-four (73%) of the participants reside in the Daegu-Kyungbuk providence areas. Sixty-three (30%) were office or service workers. Nearly one-third (30.4%) of the participants earned monthly incomes of less than 1,000,000 Korean Won (approximately US \$1,000).

Descriptive statistics suggest that public input may be an important factor in determining the price acceptability of user fees. The grand mean across the 12 scenarios for the price acceptability of user fees was 5.73. Respondents also rated scenario 1 as the scenario with the highest price acceptability, but scenario 5 produced the lowest mean score on the price acceptability concept. For price acceptability of user fees, salient predictors were "fee levels," "distribution of fee," and "benefits to frequent users." Spearman rank correlation was used to

check a monotonic relationship among the 12 scenarios on social equity and fee acceptability using a hypothetical fee on the two outcome variables. The results indicated that both social equity and price acceptability of user fees tended to be ranked by respondents in similar ways.

Table 1. Participant Socio-demographic Profile (N=210)

Variable		Freq.	%	Variable		Freq.	%
Gender	Male	104	49.5	Residency	Taegu/Kyungbuk Provinces	154	73.4
	Female	106	50.5		Others	56	26.6
Age	10s	24	11.4	Occupation	White color	63	30.0
	20s	71	33.8		Blue color	12	5.7
	30s	90	42.9		Self-employed/business	17	8.1
	40s	19	9.0		Managerial and high skilled	40	19.1
	above 50	6	2.9		Student	58	27.6
Education	Under high school	13	6.2	Monthly income (After Tax)	House maker	6	2.9
	High school diploma	59	28.1		Others	14	6.7
	College graduate	133	63.3		Below 1 million (KW)/ \$999	64	30.4
	Post graduate	5	2.4		From 1 to 1.99 Million (KW)/ \$1,000 - \$1,999	58	27.6
					From 2 to 2.99 Million (KW)/ \$2,000 - \$2,999	50	23.8
					From 3 to 3.99 Million (KW)/ \$3,000 - \$3,999	21	10.0
					From 4 to 4.99 Million (KW)/ \$4,000 - \$4,999	5	2.4
Above 5 Million (KW) /(\$5,000)	9	4.3					

## 4.2 Results of hypothesis testing

### 1) Analysis of difference for the methods of rationing users

Table 2 presents the statistical differences among the variables (methods of rationing users; first-come and first-served, reservation, lottery, and price increase) on three components (perceived crowding, leisure conflict, and willingness to pay extra fees). The three components are significantly different among the four variables.

For the perceived crowding ( $F = 3.772, p < .012$ ), the group of price increase ( $M = 5.19$ ) is higher than the other groups (lottery ( $M = 4.01$ ), reservation ( $M = 3.86$ ), and first-come and first-served ( $M = 3.74$ )). For the leisure conflict ( $F = 9.152, p < .001$ ), the group of price increase, like the perceived crowding, is the highest group. Comparisons among the groups that preferred the first-come and first-served indicated that they were likely to score lower on the perceived

crowding ( $M=3.74$ ), leisure conflict ( $M=3.14$ ), and willingness to pay extra fees ( $M=3.63$ ).

The group of people who chose the lottery type tended to score higher than the group of people who chose the reservation (telephone) on the three components (perceived crowding, leisure conflict, and willingness to pay extra fees). The group of people who chose "increase of price" as a rationing method tended to score relatively higher than any other group on leisure conflict ( $M=5.25$ ) and willingness to pay extra fees ( $M=5.25$ ).

Table 2. Mean and Standard Deviation (SD) for Rationing Users on Three Outcome Variables

Variable	Methods of Rationing Users								F ( <i>p</i> -value)
	First-come & first served (N=80)		Reservation (N=96)		Lottery (N=18)		Price increase (N=16)		
	M	SD	M	SD	M	SD.	M	SD.	
Perceived crowding	3.74	1.58	3.86	1.49	4.01	1.40	5.19	1.86	3.77 (.012*)
Leisure conflict	3.14	1.42	3.35	1.71	4.38	1.41	5.25	1.61	9.15 (.001*)
Willingness to pay extra fee	3.63	1.62	3.59	1.79	4.63	1.51	5.25	1.61	5.26 (.002*)

Note. Scale ranges from 1 (very unlikely agree) to 7 (very likely agree).

\*  $p < .05$

## 2) A difference in preference for the rationing users and admission fees

Two-way ANOVA was used to test hypothesis 2 (main effects, rationing users, and admission fees). Before checking the main effects, the interaction effect was examined. There is no interaction effect ( $F(14, 1655) = .989$ ,  $p < .462$ ) between the main effects. Therefore, the main effects were identified. Both main effects (rationing method ( $F(2, 1655) = 7.927$ ,  $p < .05$ ) and admission fees ( $F(7, 1655) = 103.207$ ,  $p < .05$ ) were significantly different among the groups. The results are presented in Table 3.

Table 3. Two-way ANOVA Results for a Difference of Preference for Rationing Users and Admission Fee at a Buddhist Temple Visit

Source	SS	df	MS	F	P	$\eta^2$
Intercept	835.28	23	36.32	11.24	.000*	.135
Rationing users (A)	51.24	2	25.62	7.93	.000*	.009
Admission fee (B)	722.45	7	103.21	31.94	.000*	.119
(A) $\times$ (B) interaction	44.75	14	3.19	.989	.462	.008
Error	5348.70	1655	3.23			
Total	27312.00	1679				

Note. \*  $p < .05$

The highest preference of rationing users for the uncrowded temple visit was reservation (M=3.80), followed by lottery (M=3.55) and first-come, first-served (M=3.34). Based on the results of this study, users preferred reservation. When the types of admission fees were provided, price discount with double pricing method was the highest (M=4.57), followed by price discount with off-season (M=4.51), discount for alternative location (M=3.97), extra charge (M=3.27), reduction of convenient facility (M=3.25), discount for group admission (M=3.20), price increase (M=2.86), and extra charge for a certain area only (M=2.77). Table 4 presents the results.

Table 4. Preference of Rationing Users and Admission fees

Types of admission	Content	Methods of Rationing Users								P value
		First-come & first-served		Reservation		Lottery		Total		
		M	SD	M	SD	M	SD	M	SD	
Price increase	Increase of admission fee	2.54	1.68	3.25	1.71	2.88	1.81	2.86	1.75	.001*
Price increment	Admission fee increase during weekend and peak season	2.99	1.79	3.30	1.65	3.49	1.85	3.27	1.78	.001*
Off-season discount	Admission fee discount on off-season	4.43	2.06	5.00	1.72	4.23	2.01	4.51	1.97	.001*
Special charge	Extra charges for popular destination	2.63	1.62	2.91	1.63	2.78	1.66	2.77	1.64	.001*
Reduction of convenient facilities	Reducing convenient facilities for overcrowded area	2.94	1.55	3.82	1.61	3.10	1.88	3.24	1.73	.017*
Discount for alternative locations	Discount for alternative location such as Sukgul Grotto	3.94	1.86	3.82	1.59	4.10	.86	3.97	1.79	.001*
Discount for early and late entry fee (Double Pricing)	Early morning and late evening discount	4.35	2.03	4.70	1.72	4.67	1.95	4.57	1.92	.001*
Elimination of group discount		2.94	1.79	3.56	1.81	3.16	1.91	3.20	1.85	.004*
	Total	3.34	1.93	3.80	1.80	3.55	1.97	3.55	1.92	.001*

Note. Scale ranges from 1 (very unlikely agree) to 7 (very likely agree).

\* $p < .05$

These results indicate that visitors preferred the price change based on the time difference. For example, the prices in the early morning or late evening are lower than the price during the day. The admission fee for off-season is low in order to disperse the visitors temporally. This method was welcomed by users who sought to enjoy the temple visits without spending much money. Additionally, the price discount for alternative locations such as Sukgul grotto and other destinations was preferred. Both methods provided various inexpensive temporal and spatial choices to the visitors.

Surcharges for specific locations, extra increases for admission fees, and extra price discounts for group admissions were not popular. The double price was preferred, but the extra increases for admission fees were not. The interaction effects for both methods for rationing users and types of admission fees indicate that reservation and off-season discount ( $M=5.00$ ) was the most popular preference, followed by reservation and double pricing ( $M=4.70$ ) and lottery and double pricing ( $M=4.67$ ). However, reservation and price increase ( $M=2.54$ ), reservation and price increase for certain location ( $M=2.63$ ), and lottery and price increase for certain location ( $M=2.63$ ) were the least popular preferences.

Finally, to investigate the influential factors for the preference of method of the rationing users and types of admission fees, Scheffe post hoc analysis was used. Table 5 presents the results. Only two comparisons between reservation and first-come and first-served had a statistically significant difference. For the preference of types of admission fees, the differences between double price and price increase for certain locations, between discounts for off-season, between double price and price increase were 1.71, 1.65, and 1.30 respectively. These differences were statistically significant ( $p < 0.05$ ).

Table 5. Mean Differences among Methods of Rationing Users

Types of Rationing Users (A)	Types of Rationing Users (B)	Mean difference (A-B)
First-come & first served	Reservation	-.45*
	Lottery	-.21
Reservation	First-come and first served	.45*
	Lottery	.25
Lottery	First-come and first served	.21
	Reservation	-.25

Note. \* $p < .05$

#### 4.3. Difference of coping behavior for perceived crowding (high, middle, and low)

Like hypothesis 3, the results of the one-way ANOVA test to identify the differences in coping behaviors for perceived crowding indicate significant differences in coping behaviors for perceived crowding. This finding shows that at least one group is different from the others. Among the coping behaviors for divided groups of high, middle, and low levels for the perceived crowding, rationalization was significantly different from the others. The Bulguksa Temple is one of the best-known tourist destinations in South Korea, so the visitors expected it to be crowded. The psychological rationalizations for each group were high ( $M=5.37$ ), middle ( $M=4.76$ ), and low

( $M=4.60$ ), demonstrating that the visitors who perceived a high level of crowds also accepted that the crowds were inevitable. Table 6 presents the results.

Table 6. Coping Behavior Patterns for Perceived Crowding (high, medium, and low)

Variables	Perceived Crowding						F	p
	Low (N=78)		Medium (N=59)		High (N=73)			
	M	SD	M	SD	M	SD		
Keep a spatial distance from other visitors	3.72	1.41	4.00	1.59	4.78	1.55	9.84	.001*
Choose a route that other visitors do not often go	3.23	1.49	3.58	1.45	4.49	1.63	13.47	.001*
Visit the site at the time that other visitors are not there.	2.83	1.52	3.05	1.48	4.05	1.85	11.71	.001*
Accept the fact that NO way to avoid them because of popular destination	4.60	1.71	4.76	1.55	5.37	1.37	5.00	.008*
Change the location in the next visit.	3.19	1.54	3.44	1.70	4.23	1.79	7.78	.001*
Use a separated route that other group tourists choose	3.87	1.69	4.12	1.62	4.62	1.66	3.89	.022*
Tolerate the overcrowding due to popular destination	4.54	1.52	4.29	1.48	4.86	1.45	2.51	.084

Note. Scale ranges from 1 (very unlikely agree) to 7 (very likely agree).

\* $p < .05$

In addition, among the coping behaviors for crowds, choosing the different routes that separated them from group travelers was high ( $M=4.62$ ), middle ( $M=4.12$ ), and low ( $M=3.87$ ), indicating that the group of visitors who perceived a high level of crowds tended to choose a different route from the group travelers.

The group who perceived a larger crowds tended to keep spatial distance from other visitors ( $M=4.78$ ) and choose a route that the other visitors did not take ( $M=4.49$ ). However, visiting the temple at a less crowded time was less preferred ( $M=4.05$ ). The characteristics of the Bulguksa Temple might contribute to these results. Most visitors go to the temple for their day trips and the temple is huge, so they were likely to prefer spatial separation from other visitors.

The displacement that visitors prefer to choose for their alternative tourist destinations in a subsequent visit was high ( $M=4.23$ ), middle ( $M=3.44$ ), and low ( $M=3.19$ ). These results indicate that groups of visitors who perceive larger crowds tend to avoid visiting or returning to the Bulguksa Temple.

Finally, the group that perceived large crowds tended to choose active strategies but due to the characteristics of the Bulguksa Temple, they also resorted to the coping behavior of

rationalization. Visitors preferred spatial to temporal dispersal as a response to perceived crowding.

#### 4.4 Preference of paying extra fees to avoid the overcrowding

For Hypothesis 4, multiple regression was conducted to analyze the influential variables on willingness to pay extra fees to avoid the crowds. The five variables were all statistically significant at the  $p < 0.05$  level ( $F(7, 202) = 14.255, p < .001$ ). The  $R^2$  (effect size) for the entire model was 0.331 (33.1% of the variance was explained by the five variables on the willingness to pay extra fees). The extra admission fee to avoid the crowds was influenced by perceived crowding ( $\beta=.309, t=4.528$ ), inappropriate etiquette ( $\beta=.205, t=2.776$ ), place attachment ( $\beta=.145, t=2.126$ ), reduction of enjoyment for temple visits ( $\beta=.142, t=2.335$ ), and clean temple visits ( $\beta=.131, t=2.127$ ). The results are presented in Table 7.

Table 7. Regression Results for Preference of Paying Extra Fees to avoid the Overcrowding

Independent Variable	Paying Extra Fee for avoiding Overcrowding				
	B	Std. Error	$\beta$	t	p
Intercept	.914	.460		1.989	.048
Perceived crowding	.325	.072	.309	4.528	.001*
Previous expectation for crowding	.114	.075	.105	1.589	.114
Reduction of enjoyment at a temple visit.	.159	.068	.142	2.335	.021*
Purpose of clean temple visit	.149	.070	.131	2.127	.035*
Place attachment	.158	.075	.145	2.126	.035*
Leisure conflict	.057	.086	.049	.659	.511
Inappropriate social etiquette	.226	.081	.205	2.776	.006*

$R=.575, R^2=.331, F(7, 202)=14.255, p < .001^*$

Note. Scale ranges from 1 (very unlikely agree) to 7 (very likely agree).

\*  $p < .05$

The variable that positively influenced willingness to pay an extra fee for their admission was perceived crowding. This corroborates previous research that found that a price increase at an environmentally damaged park can reduce visitor demand (Kim & Lee, 2010; Park, 2005). However, this method can deter visits from lower-income people and raise the equity issue.

In addition, the misbehavior or lack of etiquette of other visitors can reduce the willingness to pay higher admission fees. The visitors who have a higher place attachment are more likely to be willing to pay extra fees. They were concerned about the overcrowding at the traditional Buddhist temple, and wanted to protect it from environmental damage or deterioration.

Visitors who did not enjoy their visit to the Buddhist temple because of the crowds tended to prefer an increase in admission fees. Finally, visitors who had a greater leisure purpose of



visiting a clean and quiet Buddhist temple tended to prefer a rise in admission fees to prevent crowds. In order to escape city life and enjoy a quiet Buddhist temple, visitors appear to recognize the need for higher admission fees.

## 5. Conclusion and Implications

The purpose of this study was to examine the preference of rationing users and admission fees among visitors to a crowded traditional Buddhist temple. The study found that the group who preferred the increased price tended to perceive crowding, leisure conflict, and willingness to pay extra fees. This group scored relatively high on the three variables.

In addition, the preferences for rationing users were, in descending order, reservation, lottery, and first-come first-served. The preferred types of admission were, in descending order, price discount via double pricing, discount on off-season, and discount for alternative destinations. This is an inexpensive way to enjoy visits to the Bulguksa temple. The visitors who perceived the most crowding tended to use active coping strategies. However, the Bulguksa temple is such a popular destination and a UNESCO cultural heritage site, so visitors tended to cope with crowds through self-rationalization.

Perceived crowds and other visitors' etiquette had a positive influence on paying extra admission charges to limit crowding. However, increasing the price may cause problems of social equity and fairness, as well as discourage the undesirable etiquette issue (Walsh, 1986).

Generalization of the findings should be considered with caution because this study was measured through a single item each on perceived crowding, leisure conflict, and willingness to pay extra fees. Nevertheless, these items may incorporate other perspectives. The further research could entail the creation of a measure with multiple items for each variable, and controlling for other variables such as age, gender and tolerance for crowds. Kim and Lee's study (2010) identified significant differences between American and Chinese visitors' awareness of a crowded environment. Future studies could identify differences between Korean visitors and visitors from other ethnic or cultural backgrounds.

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