

The Pennsylvania State University  
The Graduate School  
College of Health and Human Development

**THE ROLE OF ENVIRONMENTAL ATTITUDE ON THE RELATIONSHIP  
BETWEEN PERCEIVED QUALITY, PERCEIVED VALUE, AND SATISFACTION  
ON FESTIVAL VISITORS' BEHAVIORAL INTENTION: THE CASE OF  
BORYEONG MUD FESTIVAL**

A Thesis in  
Recreation, Park, and Tourism Management

by  
Youngjoon Choi

© 2011 Youngjoon Choi

Submitted in Partial Fulfillment

of the Requirements

for the Degree of

Master of Science

May 2011

The thesis of Youngjoon Choi was reviewed and approved\* by the following:

Christine Buzinde  
Assistant Professor of Recreation, Park, and Tourism Management  
Thesis Advisor

Deborah Kerstetter  
Professor of Recreation, Park, and Tourism Management

Alan Graefe  
Associate Professor of Recreation, Park, and Tourism Management

Garry Chick  
Professor of Recreation, Park, and Tourism Management  
Department Head

\*Signatures are on file in the Graduate School.

## ABSTRACT

Given that visitors to a nature-based festival are more likely to be exposed to the natural environment, it is important to combine consumer behavioral constructs with environmental attitudes. The purpose of this study was to extend festival research by examining the role of environmental attitude on individuals' perception of and satisfaction with a nature-based festival. This study examined the role of environmental attitude in the Boryeong Mud Festival, which is the most popular nature-based festival in South Korea. A questionnaire was developed to measure four latent constructs (quality, perceived value, satisfaction, and behavioral intention) related to visitors' evaluation of the festival and to investigate their environmental attitude by using the six-item NEP scale (Dunlap & Van Liere, 1978). In order to collect data, an on-site intercept survey was used with visitors who attended the 12th Boryeong Mud Festival from July 11th to 19th, 2009. Among 442 visitors who agreed to participate in the survey, 392 cases were used for the analyses. As a result, this study identified five quality dimensions of a nature-based festival: festival program, information service, festival product, convenient facilities, and natural environment. Also, festival visitors' environmental attitude was documented with the six-item NEP scale and they were divided into a favorable environmental attitude group (FEAG) and a moderate environmental attitude group (MEAG). Using a multi-group mediation analysis, the impact of visitors' environmental attitude on the interrelationships between quality, perceived value, satisfaction, and behavioral intention was examined. This study contributes to the tourism literature by providing empirical evidence that visitors differently perceive of the experience of a nature-based festival depending on their environmental attitude. From a marketing perspective, the results in this study can be beneficial to festival organizers in that they support any efforts taken by the industry to incorporate ecological messages within promotional efforts.

## TABLE OF CONTENTS

List of Tables - - - - -	v
List of Figures - - - - -	vi
INTRODUCTION - - - - -	1
LITERATURE REVIEW - - - - -	4
Determinants Predicting Behavioral Intentions - - - - -	4
1. Festival Quality - - - - -	4
2. Perceived Value - - - - -	5
3. Satisfaction - - - - -	6
The New Environmental Paradigm - - - - -	8
METHODS - - - - -	12
Research Setting - - - - -	12
Measurement - - - - -	13
Data Collection - - - - -	14
RESULTS - - - - -	15
Hypotheses Testing - - - - -	20
Additional Analyses - - - - -	23
DISCUSSION - - - - -	26
CONCLUSION - - - - -	31
REFERENCES - - - - -	32
APPENDIX - - - - -	40

## LIST OF TABLES

Table 1: Results of exploratory factor analysis - - - - -	15
Table 2: Responses to the six NEP questions - - - - -	17
Table 3: Sequential process of invariance tests across two festival visitor groups - -	18
Table 4: Results of confirmatory factor analysis - - - - -	19
Table 5: Standardized Path Coefficients in the Final Model - - - - -	21
Table 6: Factor regression, total effects, and indirect effects - - - - -	22
Table 7: Squared multiple correlations for the two structural equation models - - - -	23
Table 8: Additional analyses comparing the effect of five quality factors - - - - -	24
Table 9: Standardized path coefficients for the five quality factors on perceived value - - - - -	25

## LIST OF FIGURES

Figure 1: Parceling for quality dimension - - - - -	16
Figure 2: Final model - - - - -	-21
Figure 3: Final model for additional analyses - - - - -	-25

## INTRODUCTION

Festivals, especially small community-based festivals, are a vehicle for local communities to promote a destination's unique image (Getz, 1991); to represent their cultural identity (Ryan & Gu, 2010); and, to enrich reciprocal community relationships (Gursoy, Kim, & Uysal, 2004; Rao, 2001). Conversely, through the maximization of benefits accrued from sponsorship and gained from media exposure, festivals can be seen as important economic drivers for regional retail businesses as well as the tourism industry at large (Lee, Lee, Lee, & Babin, 2008; Steynberg & Saayman, 2004). Within contemporary society, the increase in the number of available festivals has been paralleled by a growth in the level of competition to attract and/or lure festival attendees away from alternative entertainment options (Kay, 2004). With increased competition, festival organizers are faced with the challenge of maintaining an optimum number of attendees and encouraging revisitation and positive word-of-mouth, which are all important factors in the success of any festival. Scholars purport that in order to effectively evaluate the performance of a festival and to understand the key factors predicting visitors' behavioral intentions to revisit and recommend a given festival, one has to measure festival quality, perceived value, and satisfaction (Lee, Petrick, & Crompton, 2007).

Extant research on festivals has been largely associated with economic, social or cultural influences on communities; however, recent scholarship is beginning to focus on environmental issues particularly as they relate to nature-based festivals (Lawton, 2009; Lawton & Weaver, 2010; Singh, Slotkin, & Vamosi, 2007). For instance, examining the perspective of festival organizers on the relationship between birding festivals and ecotourism, Lawton (2009) identified four distinct subgroups (normatives, minimalists, recruiters, and fund-raisers) based on the degree of adherence to the objectives of sustainability and ecotourism-related education. Similarly, Lawton and Weaver (2010) identified and differentiated birding festivals in terms of the degree to which festival

organizers practiced sustainable ancillary resource management. Yet another example of the link between nature-based festivals and environmental attitudes was presented by Singh et al. (2007) who examined visitors' attitudes, opinions, and behaviors associated with two birding festivals. Although they provide useful information, few of the above festival studies combine consumer behavioral constructs with environmental attitudes.

As the concern about environmental issues has been rapidly increasing for the last 30 years, researchers in psychology, consumer behavior, and services marketing have focused on the study of psychological factors that exert influence on people's ecological behavior as well as their attitude toward nature (Dunlap & Van Liere, 1978). Festival visitors involved in the consumption of a staged experience (Sternberg, 1997) will have different experiences at various types of festivals in terms of setting, themes, and program content, environmental attitude can play an important role in evaluating the attributes of nature-based festivals. Further, visitors to a nature-based festival are more likely to be exposed to the natural environment because nature-based festivals utilize natural resources and the landscape to develop their programs and the setting. Given that the perception of consumers can be largely influenced by the physical and social setting of the experience (Axelsen & Swan, 2009), it is expected that visitors who attend a nature-based festival may have different perceptions of the programs and setting depending on their environmental attitude. Furthermore, the interrelationship of determinants predicting behavioral intention to revisit and to recommend a nature-based festival may vary between visitors who have a favorable environmental attitude and those who have not.

As a measurement scale for respondents' attitude toward nature, the New Environmental Paradigm (NEP) scale (Dunlap & Van Liere, 1978) has been widely used in the tourism literature. By using the NEP scale, previous studies (Luo & Deng, 2007; Uysal, Jurovski, Noe, & McDonald, 1994; Wurzinger & Johanson, 2006) have provided empirical



evidences that tourists' environmental attitude has stronger explanatory power for perceptions, motivations, and behaviors in nature-based tourism in comparison to demographic characteristics. Thus, it seems reasonable to measure festival visitors' environmental attitude and to compare this to their perceptions of a nature-based festival utilizing the NEP scale.

This study was undertaken at the Boryeong Mud Festival, which is one of the most famous nature-based festivals in South Korea. The purpose of this study was (1) to examine the interrelationships between festival quality, perceived value, satisfaction, and behavioral intention in a nature-based festival, (2) to investigate the environmental attitude of festival visitors by using the 6-item New Environmental Paradigm (NEP), and (3) to understand the role of environmental attitude on the structural relationships among determinants predicting festival visitors' behavioral intention through a multi-group analysis. Following a literature review, methods and results are presented, and theoretical and managerial implications are discussed.

## LITERATURE REVIEW

### Determinants Predicting Behavioral Intentions

The consumer behavior and services marketing literature has suggested that *quality*, *perceived value*, and *satisfaction* are primary constructs explaining consumers' decision making processes (Anderson & Sullivan, 1993; Bignie, Sanchez, & Sanchez, 2001; Cronin & Taylor, 1992; Cronin, Brady, & Hult, 2000; Oliver, 1980). Tourism researchers who have empirically examined the relationships between the three antecedents (*i.e.*, quality, perceived value, and satisfaction) and behavioral intention have concluded that the evaluations of quality affect tourists' perceived value and satisfaction, which lead to their behavioral intention (Baker & Crompton, 2000; Lee et al., 2008; Petrick, 2004; Petick & Backman, 2002). These causal relationships are relevant to the context of a nature-based festival, but should be considered in a time-sequential process. For example, visitors undergo three phases in constructing their behavioral intentions to revisit and recommend a festival. In the first phase, visitors may experience the multiple attributes of a festival, which are used to assess quality. In the second phase, based on their evaluation of festival attributes, participants may assign cognitive and affective values to the festival, which inevitably influence their satisfaction with the festival. In the final phase, the appraisal of quality, perceived value, and satisfaction may impact their behavioral intentions to revisit and to recommend the festival. Bagozzi's (1992) framework of "appraisal-emotional response-coping" provides theoretical justification for these causal relations between festival quality, perceived value, satisfaction, and behavioral intention by consecutively linking cognitive evaluation to affective responses and behavioral intentions.

#### *1. Festival Quality*

The first antecedent of behavioral intention is quality. In the consumption of services and experiences, quality refers to the consumers' evaluation of the overall excellence or

superiority of a service (Olshavsky, 1985; Zeithaml, 1988). Parasuraman, Zeithaml, and Berry (1985) developed a service quality measurement scale, SERVQUAL, in order to measure the perception of service received compared to prior expectations of what the service should be. In the context of festivals, quality is highly related to the assessment of one's touristic experience (Crompton & Love, 1995) within the physical settings and natural environment of the festival, or the servicescape (Bitner, 1990). Previous literature on festival quality has suggested that visitors' evaluation of festival quality is affected by the multiple attributes of services and experiences related to the festival. In his seminal work on festivals, Getz (1991) argued that individuals perceive the quality of a festival provider through its multiple attributes, including a multiplicity of roles, festival spirit, satisfaction of basic needs, uniqueness, authenticity, tradition, flexibility, hospitality, tangibility, theming, symbolism, affordability, and convenience. Similarly, Baker and Crompton (2000) identified and empirically tested four festival attribute categories (generic features, specific entertainment features, information sources, and comfort amenities). Lee et al. (2008) also proposed seven attributes of the "festivalscape" (i.e., convenience, staff, information, program content, facility, souvenirs, and food) by applying the concept of servicescapes (Bitner, 1992) to a festival context. This study conceptualizes festival quality broadly by including multiple attributes of services and experiences associated with a nature-based festival, including festival program, information service, festival product, convenient facilities, and natural environment.

## *2. Perceived Value*

Perceived value has been touted as the leading predictor of repurchasing intentions and word-of-mouth (Parasuraman & Grewal, 2000; Petrick & Backman, 2002; Woodruff, 1997). Zeithaml (1988) defined perceived value as "the consumer's overall assessment of the utility of a product based on perceptions of what is received and what is given" (p. 14). In

general, as a trade-off between benefits and costs (Lovelock, 2000), perceived value represents “what the consumer gets for what he or she gives” (Petrick, Morais, & Norman, 2001, p. 42). However, perceived value does not always mean direct monetary exchange; it also encompasses indirect monetary costs or non-monetary value, such as time commitments. For example, festival visitors might spend time traveling to a festival and spend money on accommodations and food and beverages. In an effort to capture non-monetary, social, or emotional value, Petrick and Backman (2002) included five dimensions of perceived value in their SERV-PERVAL scale: quality, monetary price, non-monetary price, reputation, and emotional response. Similarly, Ruyter, Wetzels, Lemmink, and Mattsson (1997); Gronroos (1997); Sweeney, Soutar, and Johnson (1999); and Sweeney and Soutar (2001) have suggested that perceived value is a multidimensional construct, which has both cognitive (e.g., functional, monetary, and reputational value) and affective dimensions (e.g., emotional value).

The relationship between service quality and perceived value has been suggested in the conceptualization of both SERVQUAL (Parasuraman, Zeithaml, & Berry, 1985) and servicescape (Bitner, 1990). The appraisal of various quality attributes can provide the criteria to evaluate “what is given” from visitors’ festival experiences. Thus, perceived value is regarded as a consequence of the evaluation of service quality. Considering the influence of quality on perceived value, past studies on festivals have examined its relationship (Lee et al., 2007; Yoon, Lee, & Lee, 2009). Given both conceptual and empirical studies supporting the strong relation between quality and perceived value, the first hypothesis assumes that perceived value of a nature-based festival will be directly influenced by festival quality:

*H1: Festival quality positively influences perceived value.*

### *3. Satisfaction*

Satisfaction, or customers’ overall affective reaction to a product or a service, describes a consumer’s experience at the end state of a psychological process (Cadotte,

Woodruff, & Jenkins, 1987; Oliver, 1980; 1997). Unlike perceived value, satisfaction has been treated as a unidimensional construct varying along a continuum from dissatisfaction to satisfaction (Sanchez, Callarisa, Rodriguez, & Moliner, 2006; Westbrook & Oliver, 1991). Past studies on festivals have regarded satisfaction as an emotional response to the festival experience, which is closely related to visitors' behavioral intentions (Baker & Crompton, 2000; Lee et al., 2008). Thus, in a festival context, satisfaction is an important construct which may lead to favorable results in revisitation and positive word-of-mouth.

According to Mehrabian and Ruseell (1974), tangible environmental cues stimulate emotional responses toward experiences. Given the fact that festivals take place in a unique environmental setting and provide a staged experience, environmental cues constructing festival quality may influence visitors' affective response. Previous studies on festivals have supported empirical evidence of the direct effect of festival quality on satisfaction (Baker & Crompton, 2000; Lee et al., 2008). Thus, it is assumed that festival quality may directly influence the degree of visitors' satisfaction level:

*H2: Festival quality positively influences satisfaction.*

Also, satisfaction has been conceptualized as a consequence or outcome in comparison to perceived value (Sweeney & Soutar, 2001). The direct effect of perceived value on satisfaction has been examined in several empirical studies (Cronin, et al., 2000; Lee et al., 2007; Lee et al., 2008; Tam, 2000). Thus, perceived value incorporating cognitive and affective value of a nature-based festival may have a direct effect on satisfaction. Considering the relation between perceived value and satisfaction, the third hypothesis is:

*H3: Perceived value positively influences satisfaction.*

With regard to the direct and indirect effects of quality, perceived value, and satisfaction on behavioral intention, there has been a heated debate about the specification of the "antecedent, mediating, and consequent" relationships (Cronin et al., 2000, p. 195).

Responding to the debate, Cronin et al. (2000) empirically tested four competing models of variables' interrelationships (value model, satisfaction model, indirect model, and direct model) across various service fields (spectator sports, participant sports, entertainment, healthcare, long distance carriers, and fast food). By confirming that the direct model outperformed the competing models, they proposed at each factor (quality, perceived value, and satisfaction) has a direct effect on behavioral intention. Researchers in festival studies examined the direct impacts of quality, perceived value and satisfaction on behavioral intention (Baker & Crompton, 2000; Lee et al., 2007). Also, Lee et al. (2008) proposed that festivalscape cues, regarded as festival quality attributes, evoke positive emotion and satisfaction and, ultimately, visitors' behavioral intention to revisit and recommend a festival. Thus, in a nature-based festival, it is also assumed that quality, perceived value, and satisfaction have a direct effect on behavioral intention. The hypotheses assume the direct effect of quality, perceived value, and satisfaction on behavioral intention are following:

*H4: Festival quality positively influences behavioral intention.*

*H5: Perceived value positively influences behavioral intention*

*H6: Satisfaction positively influences behavioral intention.*

### The New Environmental Paradigm

The New Environmental Paradigm (NEP) scale, developed by Dunlap and Van Liere (1978), has been widely used as a measure of an individual's environmental attitude. In contrast to the "dominant social paradigm" emphasizing beliefs in progress, material abundance, and unlimited growth through technologies (Pirages & Ehrlich, 1974), the NEP scale represents the attitude changes in public opinion toward harmony with nature rather than viewing nature as a resource solely for human purpose. By looking back at studies that have applied the NEP scale, Dunlap (2008) found that hundreds of studies in various nations

have employed three versions of the NEP scale (the original 12-item NEP scale, the revised 15-item NEP scale, and the reduced 6-item NEP scale) to explain human dimensions about environmental concerns. The original 12-item NEP scale was developed to capture three main themes in environmental issues: “existence of ecological limits to growth, importance of maintaining the balance of nature, and rejection of the anthropocentric notion that nature exists primarily for human use” (Dunlap, 2008, p. 6). Also, by amending the wording and adding two new facets (feelings about modern industrial society and eco-crises), the original NEP scale was revised into the 15-item scale, which included 8 pro-NEP and 7 anti-NEP items. The reduced six-item NEP scale, which has one pro-NEP and one anti-NEP item for each of the three facets (balance of nature, limits to growth, and anti-anthropocentrism), has been widely used as well (Gooch, 1995; Steger & Witt, 1989; Stern & Dietz, 1995; Widegren, 1998). In their empirical study, Bostrom, Barke, Turaga, and O’Connor (2006) concluded that the six-item NEP scale is sufficiently representative of the original 12-item or the revised 15-item NEP scales. Given that this study focuses on individuals visiting a festival in Korea, it is notable that studies have used the NEP scale with Korean respondents. Shin (2001), for example, found that the NEP scale is applicable in a Korean setting, and recommended using the six-item NEP scale in situations where there is limited time for survey administration. In addition, the Korea National Park Authority (1999) suggested that Korean respondents are more at ease answering the six questions of the NEP scale to estimate their environmental attitude.

Researchers also have employed three versions of the NEP scale in order to understand the environmental attitude of ecotourists or nature-based tourists. Uysal et al. (1994) conducted a study in the US Virgin Islands National Park to investigate variation in environmental attitude depending on visitors’ trip behavior and characteristics (i.e., age, gender, marital status, and education). The results indicated that visitors’ trip behavior is

highly related to environmental attitude, and demographic characteristics play a minor role. Surveying in a national forest in China, Luo and Deng (2007) documented a positive relationship between the NEP score and motivations for nature-based tourism: visitors who have a higher environmental attitude showed a higher desire to be in a nature and to learn about nature. Also, Wurzinger and Johansson (2006) compared the environmental attitude of ecotourists, nature tourists, and city tourists. They found a linear relationship between tourists' environmental attitude and type of trip: the NEP score is respectively higher for ecotourists than nature tourists and city tourists. In their study to estimate the economic preservation value of the Korean Demilitarized Zone (DMZ) and Civilian Control Zone (CCZ), Lee and Mjelde (2007) used the 6-item NEP scale to show that people with a strong environmental attitude have an increased likelihood of donating to preserve the DMZ and CCZ.

Also, Kim, Borges, and Chon (2006) employed the NEP scale at the International Festival of Environmental Film and Video (FICA). They examined how the motivations of festival visitors differed by the level of environmental attitude. By dividing respondents into three groups (Low NEP group, Middle NEP group, and High NEP group) based on the summated scores of NEP scale, the results showed that visitors' environmental attitude is positively related to their motivation to attend environmental issue oriented programs.

Literature on festivals also has shown that visitors' characteristics have a significant impact on their perceptions of festival patrons (Yuan & Jang, 2008). More specifically, visitors' psychological characteristics (e.g., environmental attitude) may influence their perception of experiences in a nature-based festival. Considering the characteristics of a nature-based festival (i.e., festival setting, theme, and program contents), the strengths of determinants predicting behavioral intentions may differ by visitors' environmental attitude. Thus, it is assumed that the relative impacts of determinants predicting behavioral intention may vary depending on visitors' response to the NEP scale. Grouping visitors based on the



NEP scale (Kim et al., 2006; Lee & Mjelde, 2007) can be one way to compare their perceptions of a nature-based festival and the interrelation of determinants of behavioral intention. I hypothesize that:

*H7: Relative impacts of determinants predicting behavioral intention may vary depending on visitors' environmental attitude.*

## METHODS

### Research Setting

The Boryeong Mud Festival has grown into one of the most successful local festivals in Korea. The festival, which was held for the first time in July 1998 in Boryeong City, Chung-Nam, South Korea, generates positive economic benefits for the local community and region. Thus, the local government has maintained the festival as an annual event for boosting local tourism. According to the Organizing Committee of the Boryeong Mud Festival, the 12<sup>th</sup> Boryeong Mud Festival (July 11~19, 2009) attracted a phenomenal number of domestic (2,067,000) and international (104,000) visitors. Also, visitor loyalty is high as shown by the revisitation rate from 2007 to 2009 (27.4%, 31.0%, and 38.4% respectively). The Boryeong Mud Festival represents the most popular nature-based festival in South Korea (Yoon, 2010).

The Mud Festival falls into the category of nature-based festivals in terms of its use of natural resources in its setting, theme, and programs. First, the festival setting is surrounded by beautiful scenery and beaches. Daecheon Beach, the main stage of the festival, is known for its unique sandy beach created by the erosion of sea shells and is one of the most popular beach destinations in South Korea. Second, the festival incorporates the unique natural resources of the region into its theme. As illustrated by the name, “the Boryeong Mud Festival,” mud represents the main theme and the symbolic maker of the local image of Boryeong City. Third, the festival builds off of natural resources for its festival programs. For example, mud powder, which is a natural resource in Boryeong City, is collected, dried, sterilized, and packaged, and is an important element of the experiential program content of the festival (e.g., mud massage, mud skiing, mud wrestling, mud waive dancing, mud pool, mud slides).

By establishing the image of Boryeong City as “a city of mud,” the festival helps to

attract more tourists into the region. In addition, the festival has increased demand for local tourism and has extended the local tourism calendar by strategically placing the Festival at the beginning of the tourism season (Getz, 1993).

## Measurement

A questionnaire was designed to obtain data on the: (1) sociodemographic characteristics of festival visitors, (2) quality, perceived value, satisfaction, and behavioral intentions associated with the Mud Festival, and (3) visitors' environmental attitude. The four latent variables (quality, perceived value, satisfaction, and behavioral intentions) in the proposed framework were measured with multiple items (Churchill, 1979). A total of 15 items for the 5 quality dimensions (festival program, information service, festival product, convenient facilities, and natural environment) were derived from previous studies on festivals (Baker & Crompton, 2000; Lee et al., 2008; Yoon et al., 2009). The wording of the quality items was revised in order to capture the unique and distinctive characteristics of the Boryeong Mud Festival. Also, six items, comprising both functional and emotional dimensions, were used to measure perceived value (Lee et al., 2008). Three items were included to address visitors' overall satisfaction (Oliver, 1997). In terms of behavioral intentions, four items were used to capture visitors' intention to revisit and their willingness to recommend (Zeithaml, Berry, & Parasuraman, 1996). Following the recommendation of previous researchers (Lee & Mjelde, 2007; Shin, 2001) the six-item NEP scale was deemed appropriate for measuring Korean's environmental attitude (Dunlap & Van Liere, 1978). All items for quality, perceived value, satisfaction, behavioral intention, and the NEP scale were measured with a five-point Likert scale ranging from strongly disagree (1) to strongly agree (5). In order to check the reliability of translation, the survey, originally written in English, was translated into Korean, and then translated back into English by two separate bilingual

individuals. Although minor changes to the wording were made based on the consensus of the two translators, there was no disagreement about the meaning of questions.

### Data Collection

An on-site intercept survey was used with visitors who attended the 12<sup>th</sup> Boryeong Mud Festival from July 11<sup>th</sup> to 19<sup>th</sup>, 2009. Given that festival visitors' demographic or psychological characteristics can differ depending on the time of day they attend the festival, the survey was administered by 10 well-trained researchers twice per day (once in the afternoon and once in the evening) across weekdays and weekends in order to obtain a representative sample. Also, Field researchers attempted to contact every fifth visitor who passed a pre-determined point at five different sites (three main stages and two main exits). After confirming that visitors had participated in festival programs, they were invited to participate in the survey. The field researchers outlined the research purpose for each potential respondent, and then a self-administered questionnaire was given to them with their consent. A total of 612 visitors were contacted, but 87 visitors didn't experience the festival yet. Without the visitors (83 visitors) who refused to participate the survey, 442 visitors (83.6% response rate) agreed to participate in the survey. In the process of data refinement, 41 questionnaires were eliminated because of either a large portion of missing data or inconsistent responses. A total of 10 questionnaires excluded because individuals did not complete to the 6 NEP items. In total, 392 cases were used in this study.

## RESULTS

In order to test the proposed hypotheses, a series of analyses was conducted using SPSS 17.0 and LISREL 8.54. According to the Organizing Committee of the Boryeong Mud Festival (2009), the festival (1998~2009) tends to have more female visitors than male visitors. The results of the study verified this fact: 53% of respondents were female. Also, the majority (79%) of the visitors were 20 to 39 years old and single (68%). In terms of education level, the majority of respondents reported being either university degree holders or students (89%).

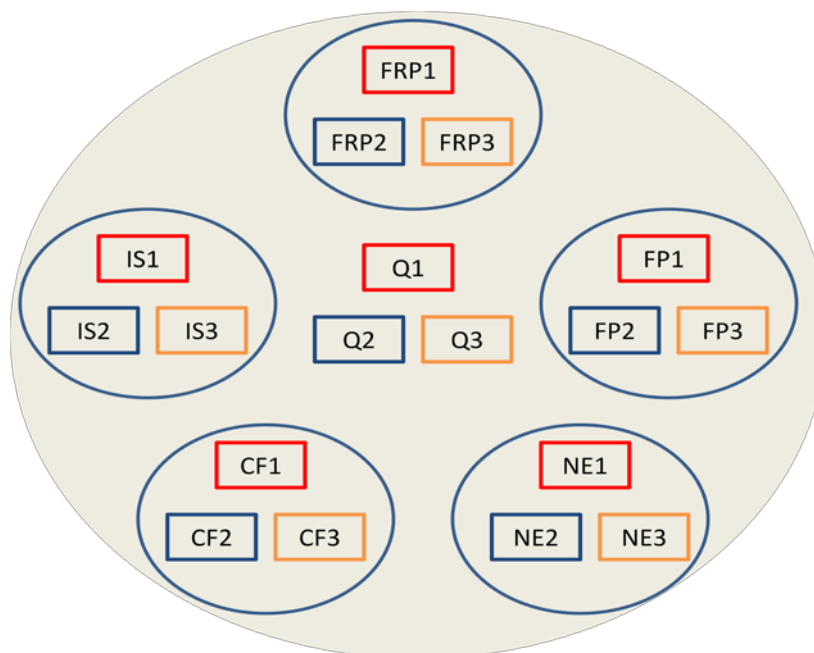
Using a multi-group mediation analysis, the impact of visitors' environmental attitude on the interrelationships between quality, perceived value, satisfaction, and behavioral intention was examined. First, an exploratory factor analysis (EFA) using the principle component method with Varimax rotation was conducted to verify the multiple dimensions of festival quality. As shown in Table 1, five quality dimensions (festival program, information services, festival product, convenient facilities, and natural environment) were identified.

Table 1  
Results of Exploratory Factor Analysis.

Questionnaire Statement	FPR <sup>a</sup>	FP	NE	CF	IS
The program was fun	.854				
The program was well organized	.794				
The program was varied	.710				
The festival products were of high quality		.837			
The prices of the festival products were reasonable		.774			
The products (souvenirs, food) offered at the festival were varied		.743			
The festival has a beautiful beach			.866		
The surrounding natural environment was great			.853		
The mud was of high quality	.310		.668		
The restroom was clean				.841	
The bathroom with shower was well maintained				.773	
The rest area was well prepared				.731	
The pamphlets were well prepared					.846
The signage enhanced my understanding of information and direction					.802
The festival staff provided good guide services					.648
Cronbach's alpha	.770	.792	.773	.720	.739
Eigenvalue	4.568	1.951	1.606	1.164	1.109
% Variance Explained <sup>b</sup>	30.45	13.01	10.71	7.76	7.40
Mean	3.511	3.000	3.552	2.820	3.206

Note: a. FP=Festival product, IS=Information service, NE=Natural environment, CF=Convenient facilities, FPR=Festival program; b. Total % variance explained = 69.33%; c. KMO=.792

Including all five quality factors was not appropriate when conducting the two group analysis because it made comparing of the hypothesized paths between the two groups (FEAG and MEAD) difficult to interpret. Thus, I used parceling (Kishton & Widaman, 1994), to maintain a manageable model and to create a broader concept of quality from multiple quality attributes. Figure 1 illustrates how parceling was used to create quality dimensions. For example, quality parcel 1 (q1) represents the mean score of festival product 1 (FP1), information service 1 (IS1), natural environment 1 (NE1), convenient facilities 1 (CF1), and festival program 1 (FP1). The five quality factors with fifteen items were reduced into a construct with three manifest variables (i.e., q1, q2, q3). More specifically, the mean scores of the five items selected from each quality dimension were used to represent the three parcels for quality (Kishton & Widaman, 1994). The three parcels not only conceptually captured a broad dimension of quality but also ensured internal consistency (Cronbach's alpha=.893).



Note: FP=Festival product, IS=Information service, NE=Natural environment, CF=Convenient facilities, FPR=Festival program, Q=Quality Parcel

Figure 1. Parceling for Quality Dimension.

In order to conduct the multi-group mediation analysis, the NEP scale was used to

divide visitor groups based on their environmental attitude. As shown in Table 2, the response to the first three questions (pro-NEP items) was positively skewed, although the responses for the last three questions (anti-NEP items) were more evenly distributed. Also, it is noticeable that there were few respondents who, overall, have low environmental attitude. Thus, based on the distribution of the NEP scores and the precedent set by Lee and Mjelde (2007), visitors were divided into a favorable environmental attitude group (FEAG) and a moderate environmental attitude group (MEAG). If respondents who answered either “agree” or “strongly agree” to the first three questions and either “strongly disagree” or “disagree” to the last three questions were assigned to FEAG (n=157, 40.1%). All other respondents were assigned to MEAG (n=235, 50.9%). Generating two groups is appropriate doing so facilitates interpretation of the path relations in the model.

Table 2  
Responses to the six NEP questions

The NEP Questions <sup>a</sup>	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
1. The balance of nature is very delicate and easily upset.	8 (2.0%)	26 (6.6%)	72 (18.4%)	194 (49.5%)	92 (23.5%)
2. Humans must live in harmony with nature in order to survive.	5 (1.3%)	10 (2.6%)	36 (9.2%)	177 (45.2%)	164 (41.8%)
3. When humans interfere with nature it often produces disastrous consequences.	4 (1.0%)	8 (2.0%)	56 (14.3%)	136 (34.7%)	188 (48.0%)
4. Mankind was created to rule over the rest of nature.	135 (34.4%)	123 (31.4%)	73 (18.6%)	50 (12.8%)	11 (2.8%)
5. Plants and animals exist primarily to be used by humans.	142 (36.2%)	113 (28.8%)	75 (19.1%)	52 (13.3%)	10 (2.6%)
6. Humans have the right to modify the natural environment to suit their needs.	133 (33.9%)	102 (26.0%)	89 (22.7%)	56 (14.3%)	12 (3.1%)

Note: <sup>a</sup> Dunlap and Van Liere (1978)

<sup>b</sup> FEAG marked all questions in colored block.

The proposed hypotheses were tested using a multi-group mediation analysis with the maximum likelihood estimation process within the LISREL 8.7 program (Joreskog & Sorbom, 1993). In order to examine the equivalence of factor loadings and the structural relations in the two groups, a sequential process was adopted (see Joreskog’s hierarchy, 1971). First, the mediation models with latent variables for each of the two groups (FEAG and MEAG) were analyzed. In Table 3, the FEAG model represents the structural equation model

for visitors with a favorable environmental attitude, and the MEAG model represents visitors with a moderate environmental attitude. The chi-square statistics for the FEAG (179.69, df=98) and MEAG (217.92, df=98) models were significant. However, since chi-square is largely influenced by sample size, other practical indices such as goodness of fit were considered: NNFI (Bentler & Bonett, 1980), CFI (Bentler, 1990), and RMSEA (Browne & Cudeck, 1993). Based on these practical fit indices, the model fit for both the FEAG model (NNFI=.953, CFI=.961, RMSEA=.073) and the MEAG model (NNFI=.933, CFI=.946, RMSEA=.072) were acceptable (Hu & Bentler, 1999).

Table 3  
Sequential Process of Invariance Tests across Two Festival Visitor Groups

Model	Model description	$\chi^2$	Df	Models compared	$\Delta\chi^2$	$\Delta$ df	P	NNFI	CFI	RMSEA
FEAG	Group 1	179.69	98					.953	.961	.073
MEAG	Group 2	217.92	98					.933	.946	.072
1	Basic model	397.61	196					.943	.953	.051
2	Equal loadings	412.59	208					.943	.951	.051
3	All constrained	417.91	214	2- 1	14.98	12	n.s.	.002	-.001	-.001
<b>3a</b>	<b>Q→PV</b>	<b>413.15</b>	<b>213</b>	3-2	5.32	6	n.s.			
3b	Q→S	417.68	213	<b>3- 3a</b>	<b>4.76</b>	<b>1</b>	<b>P&lt;.05</b>			
3c	Q→B	417.90	213	3-3b	.23	1	n.s.			
3d	PV→S	417.56	213	3-3c	.01	1	n.s.			
3e	PV→B	417.85	213	3-3d	.35	1	n.s.			
3f	S→B	417.91	213	3-3e	.06	1	n.s.			
				3-3f	.01	1	n.s.			

Second, in Model 1 the first two-group mediation model was tested. In model 1 the two groups were analyzed together by allowing all parameters to be freely estimated. The model fit (chi-square=397.61, df=196) was acceptable (NNFI=.943, CFI=.953, RMSEA=.051). Thus, it can be concluded that covariance matrices are invariant in the two groups.

Third, in Model 2 the invariant factor loadings in the two groups were tested by



constraining all factor loadings. In terms of model fit, Model 2 (chi-square=412.59, df=208) had acceptable fit (NNFI=.945, CFI=.953, RMSEA=.050). However, the chi-square (14.98, df=12) was not statistically significant between Model 1 and Model 2, and the differences of practical fit indices were not distinguishable (NNFI=.002, and CFI=.000, RMSEA=.001). Thus, it is concluded that the factor loadings in the two groups are also invariant. Table 4 presents the factor loadings of the four latent variables and the results of confirmatory factor analysis using the Maximum Likelihood method of estimation. Because the covariance matrices and the factor loadings of the four latent variables (quality, perceived value, satisfaction, and behavioral intention) between the two groups were invariant, it was possible to conduct further analysis comparing the structural relations among the four latent variables.

Table 4  
Results of Confirmatory Factor Analysis

Latent variables	Factor Loading	t-value (Standard Error)	Reliability
Factor 1: Quality <sup>a</sup>			.893
Q1. Mean (FPR1 <sup>b</sup> , IS1, FP1, CF1, NE1)	1	NA <sup>c</sup>	
Q2. Mean (FPR2, IS2, FP2, CF2, NE2)	.98	21.72 (.04)	
Q3. Mean (FPR3, IS3, FP3, CF3, NE3)	.88	18.85 (.05)	
Factor 2: Perceived Value			.880
PV1. Visiting this festival was a good quality product.	.85	15.77 (.05)	
PV2. While visiting this festival, I received a good quality service.	.89	15.56 (.06)	
PV3. The choice to visit this festival was the right decision.	1	NA	
PV4. I obtained good results from visiting this festival.	.93	16.96 (.05)	
PV5. Visiting this festival is valuable and worth it.	.91	17.55 (.05)	
PV6. The value of visiting this festival was more than what I expected.	.90	14.16 (.06)	
Factor 3: Satisfaction			.873
S1. I believe that I did the right thing in attending the festival.	1	NA	
S2. As a whole, I am happy with the festival.	.94	21.80 (.04)	
S3. Overall, I am satisfied with the festival.	.91	20.14 (.05)	
Factor 4: Behavioral Intentions			.883
BI1. I will keep attending the festival.	.97	18.62 (.05)	
BI2. I will put priority on the festival over other festivals when deciding whether to attend.	1	NA	
BI3. I will recommend the festival to my friends and neighbors.	.86	18.00 (.05)	
BI4. I will spread positive word-of-mouth about the festival.	.97	25.23 (.04)	

Note: <sup>a</sup> 3 manifest variables for the quality construct were created through a parceling method.

<sup>b</sup> FPR=Festival Program, IS=Information Service, FP=Festival Product, CF=Convenient Facilities, NE=Natural Environment.

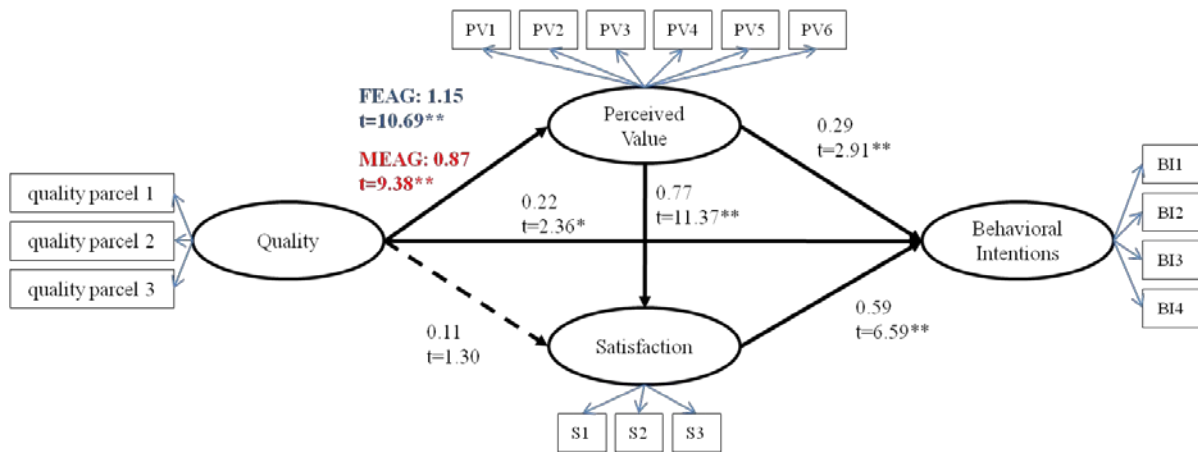
<sup>c</sup> t-values were not obtained for those variables fixed at 1.

Further analyses were conducted to compare the b-weight differences between the two groups. In Model 3, all factor regressions were constrained to be equal and the resulting

chi-square (417.91, df=214) was statistically significant. On the other hand, only four factor regressions, except one path, were constrained to be equal in Model 3a~3f. By comparing the chi-square statistics between Model 3 and all the other models, the results showed that only Model 3a, which constrained the path from quality to perceived value, had a statistically better model fit ( $\Delta\chi^2=4.76$ ,  $\Delta df=1$ ,  $p<.05$ ). Thus, Model 3a was chosen as the final model.

### Hypotheses Testing

The final model is shown in Figure 2 (chi-square=413.15, df=213, NNFI=.945, CFI=.953, RMSEA=.050). Unstandardized path coefficients were used in a multi-group analysis because it allows for a comparison of each individual factor regression. First, the direct effects of quality on perceived value for both FEAG (unstandardized coefficient=1.15, t-value=10.69) and MEAG (unstandardized coefficient=.87, t-value=9.38) were statistically significant at the level of .01. Thus, H1 was supported. However, the direct effect of quality on satisfaction (unstandardized coefficient=.11, t-value=1.30) was not significant. This result failed to support H2. On the other hand, H3 was supported with the result that there was a significant direct effect of perceived value on satisfaction (unstandardized coefficient=.77, t-value=11.37). This result explains the role of perceived value as a mediator linking quality and satisfaction. Consistent with previous literature (Baker & Crompton, 2000; Cronin et al., 2000; Lee et al., 2008), all three determinants (quality, perceived value, and satisfaction) had a direct effect on behavioral intention; thus, H4, H5, and H6 were supported. Finally, the two group-mediation analyses found that the strength of the path from quality to perceived value was statistically different in FEAG and MEAG. Quality for FEAG (unstandardized coefficient=1.15) had a stronger impact on perceived value than it did for MEAG (unstandardized coefficient=.87). As a result, H7 was supported.



\*:  $p < .05$ ; \*\*:  $p < .01$

Figure 2. Final Model.

Table 5 shows the standardized path coefficients between quality, perceived value, satisfaction, and behavioral intention in the final model. All hypothesized paths were statistically significant except the path from quality to satisfaction.

Table 5  
Standardized Path Coefficients in the Final Model

		Quality	Perceived Value	Satisfaction
FEAG	Perceived Value	<b>.81**</b>		
	Satisfaction	.08	<b>.76**</b>	
	Behavioral Intention	<b>.13*</b>	<b>.25**</b>	<b>.51**</b>
MEAG	Perceived Value	<b>.61**</b>		
	Satisfaction	.08	<b>.76**</b>	
	Behavioral Intention	<b>.13*</b>	<b>.25**</b>	<b>.51**</b>

Note: \*:  $p < .05$ ; \*\*:  $p < .01$

The differences in total and indirect effects of quality between FEAG and MEAG are presented in Table 6. In both groups, the total effect of quality on behavioral intention was statistically significant. However, the total effect of quality predicting visitors' behavioral intention was stronger in FEAG than in MEAG. To access this difference, the joint significance test (MacKinnon et al., 2002) of the indirect effects (mediated effects) for FEAG and MEAG were examined. The mediated effect of quality on satisfaction was statistically significant for both groups: the path from quality to perceived value and the path from perceived value to satisfaction were jointly significant. In addition, perceived value mediated quality and behavioral intention. The mediated effects of perceived value predicting

behavioral intentions were statistically significant for both groups. In the final model, the mediated effects explained a large portion of the total effect. The results indicated that the mediated effect of quality on satisfaction for FEAG was strong (.89/1.00=89.0%), while the residual direct effect on satisfaction was small and not significant. Also, the mediated effect of quality on satisfaction was strong for MEAG (.67/.78=85.9%). In addition, 60.0% (.45/.75) of the total effect of perceived value on behavioral intention was explained by the mediated effect, although the effect of perceived value on behavioral intention was only partially mediated by satisfaction. The mediated effect of quality on behavioral intention was strong for both FEAG (.92/1.14=80.7%) and MEAG (.71/.93=76.3%).

Table 6  
Factor Regression, Total Effects, and Indirect Effects

Factors	FEAG			MEAG		
	Quality	Perceived Value	Satisfaction	Quality	Perceived Value	Satisfaction
<i>Factor Regression</i>						
Value	<b>1.15<sup>a</sup></b> (.11) <sup>b</sup> <b>10.69<sup>c</sup></b>			<b>0.87</b> (0.09) <b>9.38</b>		
Satisfaction	0.11 (0.09) 1.30	<b>0.77</b> (0.07) <b>11.37</b>		0.11 (0.09) 1.30	<b>0.77</b> (0.07) <b>11.37</b>	
Behavioral Intentions	<b>0.22</b> (0.09) <b>2.36</b>	<b>0.29</b> (0.10) <b>2.91</b>	<b>0.59</b> (0.09) <b>6.59</b>	<b>0.22</b> (0.09) <b>2.36</b>	<b>0.29</b> (0.10) <b>2.91</b>	<b>0.59</b> (0.09) <b>6.59</b>
<i>Total Effects of ETA on ETA</i>						
Satisfaction	<b>1.00</b> (0.09) <b>10.67</b>	<b>0.77</b> (0.07) <b>11.37</b>		<b>0.78</b> (0.09) <b>8.27</b>	<b>0.77</b> (0.07) <b>11.37</b>	
Behavioral Intentions	<b>1.14</b> (0.10) <b>11.38</b>	<b>0.75</b> (0.08) <b>9.71</b>	<b>0.59</b> (0.09) <b>6.59</b>	<b>0.93</b> (0.10) <b>9.16</b>	<b>0.75</b> (0.08) <b>9.71</b>	<b>0.59</b> (0.09) <b>6.59</b>
<i>Indirect Effects of ETA on ETA</i>						
Satisfaction	<b>0.89</b> (0.11) <b>8.44</b>			<b>0.67</b> (0.09) <b>7.08</b>		
Behavioral Intentions	<b>0.92</b> (0.11) <b>8.54</b>	<b>0.45</b> (0.08) <b>5.86</b>		<b>0.71</b> (0.10) <b>7.29</b>	<b>0.45</b> (0.08) <b>5.86</b>	

Note: <sup>a</sup> Unstandardized path coefficients; <sup>b</sup> Standard errors for unstandardized coefficients; <sup>c</sup> T-values

Table 7 shows the explained variance in endogenous constructs. In the case of FEAG, 59% of perceived value, 74% of satisfaction, and 76% of behavioral intention was explained. For MEAG, 40% of perceived value, 61% of satisfaction, and 61% of behavioral intention

was explained. In general, the results suggest that endogenous constructs explained more of the variance in the FEAG model. This was less true for the MEAG model.

Table 7  
Squared Multiple Correlations for the Two Structural Equation Models

	Perceived Value	Satisfaction	Behavioral Intention
FEAG	.59	.74	.76
MEAG	.40	.61	.61

### Additional Analyses

Even though this study found that the effect of quality on perceived value was different between the two groups, it was not clear which quality factors were actually different. In order to capture how each quality factor influenced perceived value in the two groups, additional analyses were conducted using Joreskog's (1971) hierarchy.

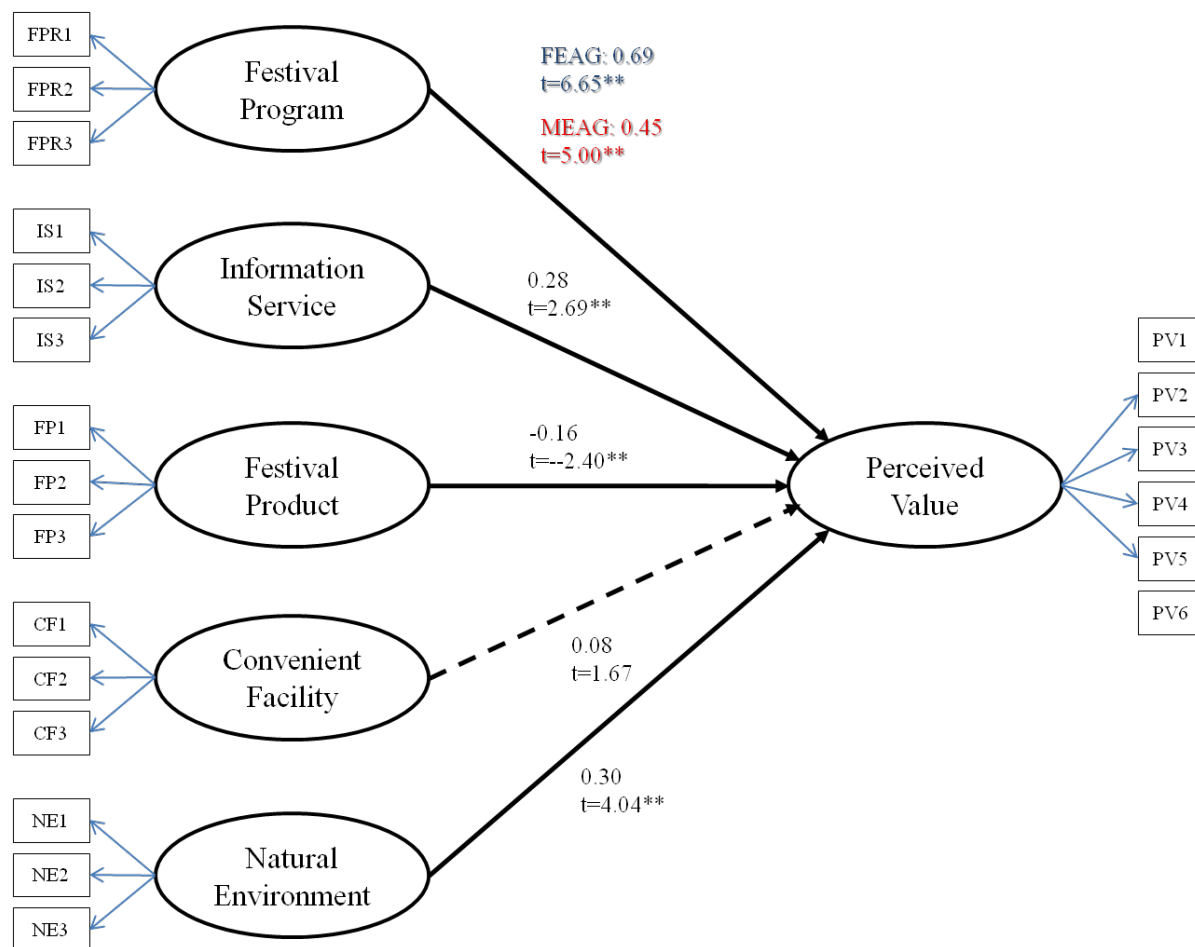
Table 8 shows the results. First, the FEAG model and the MEAG model which have 6 latent variables (festival program, information service, festival product, convenient facility, the natural environment, and perceived value) were tested. Chi-square for the FEAG (238.01,  $df=169$ ) and the MEAG (296.37,  $df=169$ ) models was significant, and the practical indices for both FEAG (NNFI=.941, CFI=.917, RMSEA=.050) and MEAG (NNFI=.922, CFI=.891, RMSEA=.057) of these models were acceptable (Hu & Bentler, 1999). Further, it was assumed that the covariance matrices and factor loadings in both groups were invariant based on the results from Model 1 and Model 2. So, path coefficients were compared between the two groups. In Model 3, all factor regressions were constrained to be equal between groups. Then, only four factor regressions, except one path, were constrained to be equal in Model 3a~3e (3a=festival program→perceived value, 3b=information service→perceived value, 3c=festival product→perceived value, 3d=convenient facilities→perceived value, and 3e=natural environment→perceived value). By comparing the chi-square differences among

Model 3~3e, the results showed that Model 3a had a better model fit. Thus, Model 3a was chosen for comparing the effect of five quality factors on perceived value.

Table 8  
Additional Analyses Comparing the Effect of Five Quality Factors

Model	Model description	$\chi^2$	Df	Models compared	$\Delta\chi^2$	$\Delta df$	P	NNFI	CFI	RMSEA
FEAG	Group 1	238.01	169					.941	.917	.050
MEAG	Group 2	296.37	169					.922	.891	.057
1	Basic model	532.55	338					.929	.957	.038
2	Equal loadings	550.91	353					.931	.956	.038
3	All constrained	558.23	358	2- 1	18.36	15	n.s.	.002	-.001	.000
<b>3a</b>	<b>Program→PV</b>	<b>552.18</b>	<b>357</b>	3-2	7.32	5	n.s.			
3b	Information→PV	556.72	357	<b>3- 3a</b>	<b>6.05</b>	<b>1</b>	<b>P&lt;.05</b>			
3c	Product→PV	556.82	357	3-3b	1.51	1	n.s.			
3d	Facility→PV	557.66	357	3-3c	1.41	1	n.s.			
3e	Nature→PV	556.63	357	3-3d	.57	1	n.s.			
				3-3e	1.6	1	n.s.			

The final model is shown in figure 3 (chi-square=558.23, df=357). Model fit indices (NNFI=.931, CFI=.956, RMSEA=.038) suggest that the model fit was acceptable. Festival program, information service, festival product, and natural environment had a significant effect on perceived value, although the effect of convenient facility was marginally significant. Also, among the five quality factors, only the effect of festival program was significantly different: festival program for FEAG (unstandardized coefficient=.69) had a stronger impact on perceived value than it did for MEAG (unstandardized coefficient=.45). Additionally, 80% of perceived value was explained in the FEAG model compared to 54% for the MEAG model.



\*: p<.05; \*\*: p<.01

Figure 3. Final Model for Additional Analyses.

Table 9 shows the standardized path coefficients for five quality factors on perceived value. Although there were some differences between the two groups, festival program had the strongest effect for both groups, followed by, natural environment, information service. Also, the effect of convenient facility was marginally significant. Festival product had a negative effect on perceived value.

Table 9  
Standardized Path Coefficients for the Five Quality Factors on Perceived Value

	Festival Program	Information Service	Festival Product	Convenient Facilities	Natural Environment
FEAG	<b>.64**</b>	<b>.25**</b>	<b>-.16*</b>	.10	<b>.28**</b>
MEAG	<b>.42**</b>	<b>.25**</b>	<b>-.16*</b>	.10	<b>.28**</b>

Note: \*: p<.05; \*\*: p<.01

## DISCUSSION

The objective of this study was to extend festival research by examining the role of environmental attitude on individuals' perception of and satisfaction with one of the most popular nature-based festivals in South Korea, the Boryeong Mud Festival. First, this study identified five quality factors of a nature-based festival: festival program, information service, festival product, convenient facilities, and natural environment. Second, the structural relations between quality, perceived value, satisfaction, and behavioral intention were examined. Third, festival visitors' environmental attitude was documented with the six-item NEP scale and they were divided into two groups (FEAG and MEAG) based on their environmental attitude. Fourth, using a multi-group analysis, this study found that visitors differently perceive of the experience in a nature-based festival depending on their environmental attitude. Additionally, follow-up analyses were documented the effect of five quality factors on perceived value between FEAG and MEAG.

The study results have several important implications for understanding festival visitors' behavioral intentions. First, the causal relations among quality, perceived value, satisfaction, and behavioral intention in the Festival were consistent with findings presented in previous literature on services marketing, tourism, and festivals (see Caruana, Mony, & Berthon, 2000; Cronin et al., 2000; Lee et al., 2007; Oh, 1999; Petrick, 2002; Tam, 2000; Yoon et al., 2009). Even though the direct effect of quality on satisfaction (H2) was trivial and not significant, perceived value fully mediated its relationship with satisfaction. The role of perceived value as a mediator linking quality and satisfaction is supported in a previous study by Patterson, Johnson, and Spreng (1997). The results of this study also supported the role of satisfaction as a mediator between quality, perceived value and behavioral intention (Lee et al., 2007; Yoon et al., 2009).

This study provides empirical evidence of a time-sequential process of visitors'



experience and evaluation about a nature-based festival. The causal relations among quality, perceived value, satisfaction, and behavioral intention in the festival followed the process of cognition, affect, and conation. According to Bogazzi's (1992) "appraisal-emotional response-coping" framework, quality and perceived value are regarded as outcomes of the cognitive evaluation of a service offering, whereas satisfaction is more related to the overall emotional response to the service experience (Cronin, et al., 2000). Also, environmental psychologists (Mehrabian & Russell, 1974) suggest that physical attributes of a festival (quality) stimulate visitors' emotional responses (affective value and satisfaction) to the experience within an environment, and these emotions change behavioral outcomes (behavioral intention). In this study, the effects of quality and perceived value on satisfaction revealed that cognitive evaluations about the festival preceded the emotional responses of visitors' experiences and behavioral intention. By investigating the interrelationships between quality, perceived value, satisfaction, and behavioral intention, this study suggests that quality, perceived value, and satisfaction are important antecedents for predicting visitors' behavioral intention in a nature-based festival.

Second, the results of this study contribute to the tourism literature by documenting visitors' environmental attitude in a nature-based festival. The six-item NEP scale was applicable in a festival setting and it was useful to capture the Korean festival visitors' environmental attitude, as proposed by Shin (2001) and the Korea National Park Authority (1999). Based on the distribution across the NEP scale, however, visitors, in general, had a relatively positive environmental attitude.

Third, this study compared the relative impacts of quality, perceived value, satisfaction, and behavioral intention between two groups (FEAG and MEAG). By using a two group analysis, the results showed that there were structural differences between the two groups. FEAG had a stronger impact of quality on perceived value and the total effect of

quality predicting visitors' behavioral intention was stronger in FEAG than in MEAG. Also, the structural relations were explained more by endogenous constructs in the FEAG model than in the MEAG model. Previous studies on festivals have suggested that festivals can be associated with adventure tourism, sport tourism, cultural tourism, and nature-based tourism depending on the characteristics of a festival (Long, Robinson, & Picard, 2004), and visitors' experiences of a nature-based festival can be different from other types of festivals (Crompton & McKay, 1997). With regard to the characteristics of the Boryeong Mud Festival, which incorporates natural resources and the environment into its theme, settings, and program contents, the results suggest that natural resources and environment played an important role when festival visitors assessed festival programs and settings, and visitors' environmental attitude was highly associated when they perceived the cognitive and affective value of the festival. The role of environmental attitude supports the notion that festival visitors' psychological characteristics influence their perception of the festival experience. Thus, this study contributes to the literature by showing how the environmental attitude of visitors in a nature-based festival influences the strengths of interrelationships among determinants predicting their behavioral intentions to revisit and recommend.

In addition, this study shows the relative impacts of five quality factors on perceived value. By closely looking at the relations between the five quality dimensions and perceived value, this study found that the festival program is the most important dimension. Information service, facility, and natural environment had significant effects on perceived value. However, the effect of festival product was not significant. The fact that the perceived value of the festival was greatly influenced by the festival program is not surprising as it is the glue that holds the festival together. The results identifying multiple quality attributes of a festival were consistent with previous studies (Baker & Crompton, 2000; Getz, 1991; Lee et al., 2008). Another important finding is that only festival program differed between the two groups, and

the other four quality dimensions (information service, festival product, convenient facilities, and natural environment) were not significantly different. Further, when accounting for visitors' environmental attitude, it was more closely related to the festival program than other quality dimensions. Thus, it seems important to incorporate natural resources into the theme and program of a nature-based festival in order to increase the perceived value of the festival.

From a marketing perspective, the results in this study can guide the strategy initiatives of festival organizers, particularly those associated with a nature-based festival. For example, improvements tied to experiential quality with natural resources and the environment will result in positive outcomes of perceived value and satisfaction, which may lead to retention or expansion of tourists (Baker & Crompton, 2000). Also, knowing that environmental attitude affects visitors' perception of the festival should reinforce the necessity of incorporating ecological messages into promotional efforts. Lawton (2009) mentioned that the incorporation of an ecotourism message in marketing promotion has little benefit because "identification of festivals with ecotourism in marketing does not increase visitor numbers or the proclivity for adherence to a more comprehensive mode of ecotourism" (p. 65). By contrast, this study found that festival visitors perceived the value of a festival differently depending on their environmental attitude. Thus, it is possible that highlighting environmental aspects in promotional activities not only reinforces the environmental aspects of a nature-based festival, but also increases the positive image of the local community and tourism (Felsenstein & Fleischer, 2003), which eventually increases visitors' intention to revisit or to recommend.

Nature-based festival organizers should keep in mind that natural resources and the environment play an important role in visitors' experiences in festival settings. There are an increasing number of tourists around the world who are concerned about environmental issues such as global warming and sustainable development. For environmentally sensitive

tourists, the emphasis on sustainable tourism development can have advantages (Silverberg, Backman, & Backman, 1996). Given that visitors to the Boryeong Mud Festival had a relatively positive environmental attitude, they may not be satisfied with their experience without seeing legitimate sustainable programmatic efforts tied to the environment. Organizers should highlight their sustainable efforts through advertisements, brochures, and web-pages, for example.

Also, festival organizers should pay more attention to sustainable tourism development. The economic impacts and the number of attendees are not the only index determining the success of a festival. From a long-term perspective, local-community festivals should focus on the conservation of their natural environment in which nature-based activities are available (Johnson, Snepenger, & Akis, 1994). In a nature-based festival, there should be an effort to minimize environmental damage and to maintain environmental assets by placing aside a certain portion of a given budget to reconstruct the natural environment.

## CONCLUSION

The results of this study indicated that there are multiple attributes that constitute visitors' experience of quality at a nature-based festival. The findings confirmed the time-sequential relationship between quality, perceived value, satisfaction, and behavioral intention. By using the six-item NEP scale, this study found that visitors have a relatively favorable attitude toward the environment. Furthermore, the results indicate that visitors' environmental attitude plays an important role in individuals' perception of and satisfaction with the attributes of the nature-based festival.

Given that the current study only focuses on one festival, the finding has a limitation to generalize. In light of this, further investigation into the role of environment attitudes in other nature-based festival settings is required in order to validate the findings of the current study. In addition, the results presented are based on the analysis of a causal model with cross-sectional data. In a practical sense, it was impossible to collect data over time from the same individuals considering the open setting of the Mud Festival. Similarly, the researcher was unable to measure visitors' actual behavior to revisit and to recommend, but rather he used behavioral intentions. Despite these minor limitations this study augments festival studies by offering insight into the relationship between consumer behavior attributes and environmental attitudes, albeit from a tourist perspective.

## REFERENCES

- Anderson, W., & Sullivan, M. (1993). The antecedents and consequences of customer satisfaction for firms. *Marketing Science*, *12*, 125-143.
- Axelsen, M., & Swan, T. (2009). Designing festival experiences to influence visitor perceptions: The case of a wine and food festival. *Journal of Travel Research*, *21*, 1-15.
- Bagozzi, R. P. (1992). The self regulation of attitudes, intentions, and behavior. *Social Psychology Quarterly*, *55*, 178-204.
- Baker, D. A., & Crompton, J. L. (2000). Quality, satisfaction and behavioral intentions. *Annals of Tourism Research*. *27*(3), 785-804.
- Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, *107*, 238-246.
- Bentler, P. M., & Bonett, D. G. (1980). Significance tests and goodness of fit in the analysis of covariate structures. *Psychological Bulletin*, *88*, 588-606.
- Bignie, J. E., Sanchez, M. I., & Sanchez, J. (2001). Tourism image, evaluation variables and after-purchase behavior: Inter-relationships. *Tourism Management*, *22*(6), 607-616.
- Bitner, M. J. (1992). Servicescapes: The impact of physical surroundings on customers and employees. *Journal of Marketing*, *56*(2), 57-71.
- Bostrom, A., Barke, R., Turaga, R. M. R., & O'Connor, R. E. (2006). Environmental concerns and the new environmental paradigm in Bulgaria. *The Journal of Environmental Education*, *37*(3), 25-40.
- Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen & J. S. Long (Eds.), *Testing structural equation models* (pp. 136-162). Newbury Park, CA: Sage.
- Cadotte, E. R., Woodruff, R. B., & Jenkins, R. L. (1987). Expectations and norms in models

- of consumer satisfaction. *Journal of Marketing Research*, 24, 305-314.
- Caruana, A., Money, A. H., & Berthon, P. R., (2000). Service quality and satisfaction: The moderating role of value. *European Journal of Marketing*, 33(11/12), 1338-1352.
- Churchill, G. (1979). A paradigm for developing better measures of marketing constructs. *Journal of Marketing Research*, 16, 64-73.
- Crompton, B., & McKay, S. L. (1997). Motives of visitors attending festival events. *Annals of Tourism Research*, 24 (2), 425-439.
- Crompton, B., & Love, L. L. (1995). The predictive validity of alternative approaches to evaluating quality of a festival. *Journal of Travel Research*. 34 (1), 11-24.
- Cronin, J. J., Brady, M. K., & Hult, G. T. M. (2000). Assessing the effects of quality, value, and customer satisfaction on consumer behavioral intentions in service environments. *Journal of Retailing*, 76(2), 193-218.
- Cronin, J. J., & Taylor, S. A. (1992). Measuring service quality: A reexamination and extension, *Journal of Marketing*, 56, 55-68.
- Dunlap, R. E. (2008). The new environmental paradigm scale: From marginality to worldwide use. *The Journal of Environmental Education*, 40(1), 3-18.
- Dunlap, R. E., & Van Liere, K. (1978). The new environmental paradigm. *Journal of Environmental Education*, 9, 10-19.
- Felsenstein, D., & Fleischer, A. (2003). Local festivals and tourism promotion: The role of public assistance and visitor expenditure. *Journal of Travel Research*, 41, 385-392.
- Getz, D. (1991). *Festivals, special events, and tourism*. New York: Van Nostrand Reinhold.
- Getz, D. (1993). Festivals and special events. In M. A. Khan, M. D. Olsen, & T. Var (Eds.), *VNR's encyclopedia of hospitality and tourism* (pp. 945-955). New York: Van Nostrand Reinhold.
- Gooch, G. D. (1995). Environmental beliefs and attitudes in Sweden and the Baltic states.

- Environment and Behavior*, 30, 520-534.
- Grob, A. (1995). A structural model of environmental attitudes and behavior. *Journal of Environmental Psychology*, 15, 209-220.
- Gronroos, C. (1997). Value-driven relational marketing: From products to resources and competencies. *Journal of Marketing Management*, 13 (5), 407-420.
- Gursoy, D., Kim, K., & Uysal, M. (2004). Perceived impacts of festivals and special events by organizers: An extension and validation. *Tourism Management*, 25, 171-181.
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6(1), 1-55.
- Johnson, J. D., Snepenger, D. J., & Akis, S. (1994). Resident perceptions of tourism development. *Annals of Tourism Research*, 21(3), 629-642.
- Jöreskog, K. G. (1971). Simultaneous factor analysis in several populations. *Psychometrika*, 36, 409-426.
- Jöreskog, K. G., & Sorbom, D. (1993). *LISREL 8: A guide to the program and applications*. Chicago: Scientific Software International.
- Kay, P. (2004). Cultural event tourism: Modelling performing arts tourism events and effective marketing strategies. In P. Long, & M. Robinson (Eds.), *Festivals and tourism: Marketing, management, and evaluation* (pp. 15-32). Gateshead: Athenaeum Press.
- Korea National Park Authority (1999). *Estimation of admission fees of Korean national parks based on valuation of natural and cultural resources* (1st Subproject). Seoul: Governmental Printers.
- Kim, H., Borges, M. C., & Chon, J. (2006). Impacts of environmental values on tourism motivation: The case of FICA, Brazil. *Tourism Management*, 27, 957-967.



- Kishton, J. M., & Widaman, K. F. (1994). Unidimensional versus domain representative parceling of questionnaire items: An empirical example. *Educational and Psychological Measurement, 54*, 757-765.
- Lawton, L. J. (2009). Birding festivals, sustainability, and ecotourism: An ambiguous relationship. *Journal of Travel Research, 48*(2), 259-267.
- Lawton, L. J., & Weaver, D. B. (2010). Normative and innovative sustainable resource management at birding festivals. *Tourism Management, 31*, 527-536.
- Lee, C. K., & Mjelde, J. W. (2007). Valuation of ecotourism resources using a contingent valuation method: The case of the Korean DMZ. *Ecological Economics, 63*, 511-520.
- Lee, S. Y., Petrick, J. F., & Crompton, J. (2007). The role of quality and intermediary constructs in determining festival attendees' behavioral intention. *Journal of Travel Research, 45*(4), 402-412.
- Lee, W. H., & Moscardo, G. (2005). Understanding the impact of ecotourism resort experiences on tourists' environmental attitudes and behavioral intentions. *Journal of Sustainable Tourism, 13*(6), 546-565.
- Lee, Y. K., Lee, C. K., Lee, S. K., & Babin, B. J. (2008). Festivalscapes and patrons' emotions, satisfaction, and loyalty. *Journal of Business Research, 61*(1), 56-64.
- Long, P., Robinson, M., & Picard, D. (2004). Festivals and tourism: Links and developments. In P. Long, & M. Robinson (Eds.). *Festivals and tourism: Marketing, management, and evaluation* (pp. 15-32). Gateshead: Athenaem Press.
- Lovelock, C. H. (2000). *Service marketing* (4<sup>th</sup> ed.). NJ: Prentice Hall International.
- Luo, Y., & Deng, J. (2007). The new environmental paradigm and nature-based tourism motivation. *Journal of Travel Research, 46*, 392-402.
- MacKinnon, D. P., Lockwood, C. M., Hoffman, J. M., West, S. G. & Sheets, V. (2002). A comparison of methods to test mediation and other intervening variable effects.

- Psychological Methods*, 7(1), 83-104.
- Mehrabian, A., & Russell, J. A. (1974). *An approach to environmental psychology*. Cambridge, MA: MIT Press.
- Oh, H. (1999). Service quality, customer satisfaction, and customer value: A holistic perspective. *Hospitality Management*, 18, 67-82.
- Oliver, R. A. (1980). A cognitive model of the antecedents and consequences of satisfaction decisions. *Journal of Marketing Research*, 17 (4), 460- 469.
- Oliver, R. A. (1997). *Satisfaction: A behavioral perspective on the consumer*. New York: McGraw-Hill.
- Olshavsky, R. W. (1985). Perceived quality in consumer decision making: An integrated theoretical perspective. In J. Jacoby & J. Olson (Eds.), *Perceived quality* (pp.3-29). Lexington, MA: Lexington Books.
- Organizing Committee of the Boryeong Mud Festival (2009). *Final report of the 12<sup>th</sup> Boryeong Mud Festival*. Boryeong City, South Korea.
- Patterson, P. G., Johnson, L. W., & Spreng, R. A. (1997). Modeling determinants of customer satisfaction for business-to-business professional services. *Journal of the Academy of Marketing Science*, 25(1), 4-17.
- Parasuraman, A., & Grewal, D. (2000). The impact of technology on the quality-value-loyalty chain: A research agenda. *Journal of the Academy of Marketing Science*, 28 (1), 168-74.
- Parasuraman, A., Zeithaml, V. A., & Berry, L. (1985). A conceptual model of service quality and its implications for future research. *Journal of Marketing*, 49(4), 41-40.
- Petrick, J. F. (2002). Development of a multi-dimensional scale for measuring the perceived value of a service. *Journal of Leisure Research*, 25(1), 4-17.
- Petrick, J. F. (2004). The roles of quality, value, and satisfaction in predicting cruise

- passengers' behavioral intentions. *Journal of Travel Research*, 42, 397-407.
- Petrick, J. F., & Backman, S. J. (2002). An examination of the construct of perceived value for the prediction of golf travelers. *Journal of Travel Research*, 41(1), 38-45.
- Petrick, J. F., Morais, D. D., & Norman, W. C. (2001). An examination of the determinants of entertainment vacationers' intentions to revisit. *Journal of Travel Research*, 40(1), 41-48.
- Pirages, D. C., & Ehrlich, P. R. (1974). *Ark II Social responses to environmental imperative*. San Francisco: W. H. Freeman.
- Powell, R. B., & Ham, S. H. (2008). Can ecotourism interpretation really lead to pre-conservation knowledge, attitudes, and behavior? Evidence from the Galapagos islands. *Journal of Sustainable Tourism*, 16(4), 467-489.
- Rao, V. (2001). Celebrations as social investments: Festival expenditures, unit price variation and social status in rural India. *The Journal of Development Studies*, 38(1), 71-97.
- Ruyter, K., Wetzels, M., Lemmink, J., & Mattsson, J. (1997). The dynamics of the service delivery process: A value-based approach. *International Journal of Research in Marketing*, 14, 231-243.
- Ryan, C., & Gu, H. (2010). Constructionism and culture in research: Understandings of the fourth Buddhist festival, Wutaishan, China. *Tourism Management*, 31, 167-178.
- Sanchez, J., Callarisa, L., Rodriguez, R. M., & Moliner, M. A. (2006). Perceived value of the purchase of a tourism product. *Tourism Management*, 27, 394-409.
- Shin, W. S. (2001). Reliability and factor structure of a Korean version of the new environmental paradigm. *Journal of Social Behavior and Personality*, 16, 9-18.
- Singh, T., Slotkin, M. H., & Vamosi, A. R. (2007). Attitude towards ecotourism and environmental advocacy: Profiling the dimensions of sustainability. *Journal of Vacation Marketing*, 13(2), 119-134.

- Silverberg, K. E., Backman, S. J., & Backman, K. F. (1996). A preliminary investigation into the psychographics of nature-based travelers to the Southeastern United States. *Journal of Travel Research, 35*, 19-28.
- Steger, M. A. E., & Witt, S. L. (1989). Gender differences in environmental orientations: A comparison of publics and activists in Canada and the US. *Western Political Quarterly, 42*, 627-649.
- Stern, P. C., & Dietz, T. (1995). The new ecological paradigm in social-psychological context. *Environment and Behavior, 27*, 723-743.
- Sternberg, E. (1997). The iconography of the tourism experience. *Annals of Tourism Research, 24*(4), 951-969.
- Sweeney, J. C., & Soutar, G. N. (2001). Consumer perceived value: The development of a multiple item scale. *Journal of Retailing, 77*, 203-220.
- Sweeney, J. C., Soutar, G. N., & Johnson, L. W. (1999). The role of perceived risk in the quality-value relationship: A study in a retail environment. *Journal of Retailing, 75* (1), 77-105.
- Tam, J. L. M. (2000). The effects of service quality, perceived value and customer satisfaction on behavioral intentions. *Journal of Hospitality and Leisure Marketing, 6*(4), 31-43.
- Uysal, M., Jurowski, C., Noe, F. P., & McDonald, C. D. (1994). Environmental attitude by trip and visitor characteristics. *Tourism Management, 15*(4), 284-294.
- Westbrook, R. A. & Oliver, R. L. (1991). The dimensionality of consumption emotion patterns and consumer satisfaction. *Journal of consumer research, 18* (June), 84-91.
- Widegren, O. (1998). The new environmental paradigm and personal norms. *Environment and Behavior, 30*(1), 75-100.
- Woodruff, R. B. (1997). Customer value: The next source for competitive edge. *Journal of the Academy of Marketing Science, 25*(2), 139-153.

- Wurzinger, S., & Johansson, M. (2006). Environmental concern and knowledge of ecotourism among three groups of Swedish tourists. *Journal of Travel Research*, 25, 217-226.
- Yoon, Y. S., Lee, J. S., & Lee, C. K. (2009). Measuring festival quality and value affecting visitors' satisfaction and loyalty using a structural approach. *International Journal of Hospitality Management* (In-press).
- Yoon, S. (2010). Get muddy and wipe your stress away. Ministry of Culture, Sports, and Tourism, July, 12, 2010. Available from <http://www.mcst.go.kr/english/issue/issueView.jsp?pMenuCD=1004000000&pSeq=1667> (accessed July, 2010).
- Yuan, J. & Jang, S. (2008). The effects of quality and satisfaction on awareness and behavioral intentions: Exploring the role of a wine festival. *Journal of Travel Research*, 46, 279-288.
- Zeithaml, V. A. (1988). Consumer perceptions of price, quality and value: A means-end model and synthesis of evidence. *Journal of Marketing*, 52, 2-22.
- Zeithaml, V., Berry, L., & Parasuraman, A. (1996). The behavioral consequences of service quality. *Journal of Marketing*, 60(2), 31-46.

APPENDIX  
Questionnaire

Dear festival participants,

I am Youngjoon Choi, a graduate student in the Department of Recreation, Park and Tourism Management at the Pennsylvania State University, USA.

Your answers will be kept confidential. The information you provide will be used for academic purposes and to improve festival quality. If you have any questions, concerns or comments regarding the study, please feel free to contact me. Thanks for your help.

Sincerely,

Youngjoon Choi/Graduate student  
Dr. Christine Buzinde/ Thesis advisor  
Department of Recreation, Park and Tourism Management  
Penn State University

Tel: 82-10-2927-\*\*\*\*    Email: yzc123@psu.edu

1. Is the Mud Festival your main purpose for visiting Boryeong today?

(1) Yes                      (2) No

2. How many times have you visited this festival in the past?

\_\_\_\_\_ times

3. How did the number of people you actually saw at the festival compare to the number of people expected to see?

Fewer than I expected 1	As many as I expected 2	More than I expected 3	I did not know what to expect 4
-------------------------------	-------------------------------	------------------------------	---------------------------------------

4. How did the number of people you saw at the festival impact your experience?

Very Negatively 1	Somewhat Negatively 2	Had no impact 3	Somewhat positively 4	Very Positively 5
-------------------------	-----------------------------	-----------------------	-----------------------------	-------------------------

5. Did you feel crowded by the number of visitors at the Boryeong Mud Festival?

Not at all crowded 1	2	Moderately crowded 3	4	Extremely crowded 5
----------------------------	---	----------------------------	---	---------------------------



6. Below is a list of some of the services and facilities provided at the Boryeong Mud Festival. Please rate the quality of each of service and facility.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The program was fun	1	2	3	4	5
The program was well organized	1	2	3	4	5
The program was varied	1	2	3	4	5
The festival products were of high quality	1	2	3	4	5
The prices of the festival products were reasonable	1	2	3	4	5
The products (souvenirs, food) offered at the festival were varied	1	2	3	4	5
The festival has a beautiful beach	1	2	3	4	5
The surrounding natural environment was great	1	2	3	4	5
The mud was of high quality	1	2	3	4	5
The restroom was clean	1	2	3	4	5
The bathroom with shower was well maintained	1	2	3	4	5
The rest area was well prepared	1	2	3	4	5
The pamphlets were well prepared	1	2	3	4	5
The signage enhanced my understanding of information and direction	1	2	3	4	5
The festival staff provided good guide services	1	2	3	4	5



7. Now we would like to know your feedback on the value of the Boryeong Mud Festival. Please circle the number which best represents your level of agreement with each statement.

---

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Visiting this festival was a good quality product.	1	2	3	4	5
While visiting this festival, I received a good quality service.	1	2	3	4	5
The choice to visit this festival was the right decision.	1	2	3	4	5
I obtained good results from visiting this festival.	1	2	3	4	5
Visiting this festival is valuable and worth it.	1	2	3	4	5
The value of visiting this festival was more than what I expected.	1	2	3	4	5

---



8. We would like to know how satisfied you were with the Boryeong Mud Festival. Please circle the number that best reflects your level of satisfaction.

---

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I believe that I did the right thing in attending the festival.	1	2	3	4	5
As a whole, I am happy with the festival.	1	2	3	4	5
Overall, I am satisfied with the festival.	1	2	3	4	5

---



9. Following are three questions about **your intention to revisit the Boryeong Mud Festival**. Please circle the number that best represents your feeling.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I will keep attending the festival.	1	2	3	4	5
I will put priority on the festival over other festivals when deciding whether to attend.	1	2	3	4	5
I will recommend the festival to my friends and neighbors.	1	2	3	4	5
I will spread positive word-of-mouth about the festival.	1	2	3	4	5

10. Following are three questions about **your general attitude toward environment**. Please circle the number that best represents your feeling.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The balance of nature is very delicate and easily upset.	1	2	3	4	5
Humans must live in harmony with nature in order to survive.	1	2	3	4	5
When humans interfere with nature it often produces disastrous consequences.	1	2	3	4	5
Mankind was created to rule over the rest of nature.	1	2	3	4	5
Plants and animals exist primarily to be used by humans.	1	2	3	4	5
Humans have the right to modify the natural environment to suit their needs.	1	2	3	4	5

These questions are about your demographic information. Your answers are anonymous and will be used only to categorize responses for different groups of visitors.

11. What is your gender?

(1) Male

(2) Female

12. When were you born? \_\_\_\_\_ (year)

13. What is your highest level of education completed?

(1) Elementary School

(2) High School

(3) 2-year College

(4) 4-year College or above

14. What is your marital status?

(1) Single

(2) Married

(3) Other

15. What is your average monthly income?

(1) \$0 - \$1,000

(2) \$1,001 - \$3,000

(3) \$3,001 - \$5,000

(4) \$5,001 - \$7,000

(5) \$7,001 - \$9,000

(6) \$9,000 or more