AN EXAMINATION OF COPING PROCESSES WITHIN THE CONTEXT OF WATER-BASED RECREATION

A Dissertation

by

JEE IN YOON

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

May 2012

Major Subject: Recreation, Park, and Tourism Sciences

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Approved by:

Chair of Committee,	Gerard T. Kyle
Committee Members,	William Alex McIntosh
	Jim Petrick
	Jane Sell
Head of Department,	Gary Ellis

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ABSTRACT

An Examination of Coping Processes within the Context of Water-based Recreation.

(May 2012)

Jee In Yoon, B.S., Ewha Womans University;

M.A., Ewha Womans University

Chair of Advisory Committee: Dr. Gerard T. Kyle

Many outdoor recreation settings present stressful situations that directly influence the quality of one's leisure experience. Some recreationists are able to maintain their enjoyment by adopting various coping strategies. In conditions that induce stress, recreationists can select from a combination of behavioral coping strategies (e.g., substitution of recreational setting or activity) and/or cognitive coping strategies (e.g., rationalization). Previous coping research has indicated that the key to understanding the stress – coping process is how one appraises the stressors. In spite of the acknowledged importance of individual appraisals, however, there is scant empirical evidence available documenting this mediating effect. To explore the role of appraisal in the stress – coping relationship, I drew upon Lazarus and Folkman's transactional theory of stress and coping. Using data collected from recreationists boating in Texas and Korea, I tested a model where the relationship between stress and coping was hypothesized to be mediated by individual's appraisals within the context of water-based recreational activities.

Data were collected from recreationists residing near Lake Granbury in Texas (n=186) and recreationists at Lake Chung-pyung in South Korea (n=462). Initial testing of the model illustrated poor fit. I then tested the model independently for the two groups. For Korean respondents, results showed that one's evaluative process (appraisal) mediated the relationship between stress level and selected coping strategies. Further, the degree of involvement with a recreational activity, attachment to a setting, and self-construal moderated the stress – appraisal – coping relationship. Model testing for American respondents showed that the factor structure deviated from what was originally hypothesized. Subsequent testing produced an alternate factor structure; direct action, disengagement, temporal substitution, and cognitive coping. However, there was no mediating role of appraisal in the relationship between stress and coping for this group. Moreover, there was no moderating effect of place attachment, leisure activity involvement, and self-construal for American respondents. In short, the results of this study partially supported the transactional theory of stress and coping. For both groups, positive appraisal was more strongly related to behavioral coping, while cognitive coping (rationalization) was influenced by respondents' negative appraisal of the boating conditions. Even under potentially stressful conditions, some recreationists consider the situation controllable. Future investigations should also consider exploring and comparing the coping processes of different user groups, across age cohorts, and among recreationists within similar contexts.

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Invaluable help has been provided by my family throughout my life, during the years I have spent in the U.S., and in my professional career. I have learned what true devotion is from my grandparents, Jungnim Kim and Wonyoung Yoon. My parents, Eunsook Kim and Sangsup Yoon, have taught me independence and confidence, which I believe to be the most important aspects of life. My sisters and their families (Cate, Peter, Cooper, Haerin, Ray, and Sooin) have given me an opportunity to share their love and witness how beautiful life can be. I would also like to thank my dear friend, Heeyeun Katie Woo, who has always believed in me.

This dissertation is dedicated to my grandmother. I would not have accomplished this body of work, nor would I be where I am in this life without her influence. She gives me strength to pursue my dreams. I remember, love, and miss you.

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1. INTRODUCTION

1.1. Study Background

How do individuals deal with stressful situations within the context of their leisure? Over the past several decades, many researchers have tried to answer this question by examining the causes and symptoms of stress in addition to evaluating stressful situations and the coping behaviors that people adopt. Although recreationists want to enjoy their activity with few interruptions, researchers have noted that many outdoor recreation settings present recreationists with stressful circumstances that may detract from one's recreational experience. These circumstances include such factors as overcrowding (e.g., Manning & Valliere, 2001), other recreationists behaving inappropriately (e.g., Miller & McCool, 2003), and poorly maintained recreation settings (e.g., Miller & McCool, 2003; Stankey & McCool, 1984).

Studying stress factors and coping behaviors in outdoor recreation contexts is important in that stressful encounters can directly influence the quality of leisure experiences. Stress can cause a state of disequilibrium for a person (Lazarus, 1966) which may lead them to perceive a situation as unpleasant. Previous studies have found that stressful encounters not only result in rather extreme coping strategies (Miller & McCool, 2003) but also produce negative outcomes such as low perceptions of well-being, dysfunctional social interaction, and symptoms of poor health (Lazarus & Folkman, 1984). To reduce these negative outcomes, people adopt coping

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This dissertation follows the style of *Leisure Sciences*.

strategies. Coping refers to any behavior or cognitive effort that reduces the level of stress and allows a person to manage a stressful situation (Sutherland, 1996). Shelby and Vaske (1991) proposed a substitution typology identifying behavioral changes to address specific coping strategies that recreationists adopt. This typology has subsequently revised by other researchers (Miller & McCool, 1994, 2003; Ziemann & Haas, 1989) to include cognitive changes (i.e., rationalization and product shift) which refer to changing one's definition/standards of recreational experiences. It is especially useful when determining if recreationists are likely to change their behavior, activity, environment, or the way they evaluate stressful situations (Anderson & Brown, 1984; Hammitt & Patterson, 1991; Shelby & Vaske, 1991; Ziemann & Haas, 1989). The revised substitution typology (Miller & McCool, 2003) presents a diverse array of behavioral changes such as temporal substitution (i.e., visiting the recreation site at a different time), activity substitution (i.e., changing the preferred activity), resource substitution (i.e., changing the recreation site), absolute displacement (i.e., changing both the resource and the activity or determining not to return to the site) and cognitive coping strategies such as rationalization (reevaluating an undesirable situation in a more favorable way), product shift (changing the definition/standards of the recreation experience) and direct action (complaining about the stressful situation to authorities).

The reason why some recreationists maintain a high level of satisfaction even under extremely stressful circumstances has been found to be because they adopt appropriate coping strategies to overcome stresses they encounter (Manning & Valliere, 2001). But how do individuals select coping strategies? Several researchers have

investigated whether the degree of stress (the intensity or frequency of stress) influences recreationists' choice of coping behavior. For instance, Miller and McCool (2003) observed that recreationists in Glacier National Park who reported a high level of stress tended to adopt somewhat extreme coping behaviors, such as absolute displacement or direct action. On the other hand, recreationists exposed to low levels of stress chose more subtle coping techniques that were cognitively based such as rationalization of the stressful encounter. Similarly, in their study of hikers in the Shining Rock Wilderness area in North Carolina, Schuster et al. (2006) concluded that the intensity of the stress experienced better predicted the coping response than the frequency of the stress.

To understand the relationship between stress and coping behavior, Lazarus and Folkman (1984) proposed a transactional theory of stress and coping. They posited that stress is the result of a perceived imbalance between one's available resources and the demands of his or her environment (Aldwin, 1994; Evans & Cohen, 1987; Miller & McCool, 2003). This transactional theory models the process by which an individual becomes stressed and copes with that stress. The model has five major components: 1) stress factors influencing person-environment transaction (i.e., the balance between the demands of one's environment and his/her available resources to respond), 2) stress perception (i.e., if the previous stage produces an imbalance), 3) cognitive appraisals (i.e., the evaluative process that examines possible coping options), 4) coping response (i.e., the selection of specific behavioral changes to cope with stress), and 5) adaptational outcomes (i.e., positive or negative consequences followed by coping behaviors). In studying this process, researchers have noted the importance of cognitive appraisal

which is the process of an individual's evaluation of a stressful situation and a search for available coping strategies. Several have noted that the way one evaluates a situation (e.g., I think I can overcome this stressful situation) affects the selection of coping strategies (Bouchard, Guillemette, & Landry-Leger, 2004; Miller & McCool, 2003; Schuster, et al., 2003, 2006). For instance, people are likely to try to deal directly with the stressor itself (e.g., direct action, displacement, substitution) if they evaluate a situation as controllable. However, if they recognize the situation as uncontrollable, they tend to focus on managing their own responses (e.g., rationalization or product shift) rather than trying to eliminate the stressor. Although the coping literature suggests the importance of the cognitive appraisal in the stress-coping relationship, existing research has examined only part of the stress-coping process such as the relationship between stress and coping or the effect of cognitive appraisal on coping behaviors (Miller & McCool, 2003; Schuster et al., 2003, 2006).

There is also reason to believe that several other variables might also alter the manner in which stressors are interpreted and recreationists' subsequent response. In the context of outdoor recreation, the degree of attachment to a recreational place is one of the important determinants of how one perceives setting conditions. For example, recreationists who are attached to a setting may regard stressful encounters more seriously or select different coping strategies than individuals who express little sentiment toward the setting (Budruk, Wilhem Stanis, Schneider, & Heisey, 2008; Peden & Schuster, 2008). Since place-attached recreationists (i.e., people who share an affective or functional bond with a place) tend to be more sensitive to setting conditions,

they are more likely to perceive detracting situations as more problematic (Warzecha & Lime, 2001; Young, Williams, & Roggenbuck, 1991). For instance, Young et al. (1991) suggested that resource-involved visitors in the Cohutta Wilderness Area in Georgia expected to see fewer people in the setting and tended to show more sensitivity toward setting conditions. In addition, authors using a multi-dimensional conceptualization of place attachment (e.g., place dependence and place identity) have observed varying effects of these dimensions on how people perceive setting conditions. For example, Kyle, Graefe, Manning, and Bacon (2004b) examined the effect of two dimensions of place attachment (i.e., place identity and place dependence) on the perception of setting conditions on the Appalachian Trail. They found that hikers with emotional bond to place (i.e., place identity) considered encountered setting conditions to be more problematic than people with a functional attachment to the setting (i.e., place dependence). Thus, we see that various sources and meanings of place attachment differentiate one's sensitivity to potential detractors in recreational settings. Further, place attachment also shapes one's selection of coping strategy. Owing to their strong place-based attachment, attached recreationists are less likely to employ setting substitution strategies to cope with undesirable conditions (Williams & Roggenbuck, 1989).

If the degree of attachment to a place has an important role for shaping one's perception of stressful situation and coping strategy, one could argue that the degree of involvement with a particular recreation activity also influences selected coping strategies. In other words, the attitudinal object with which people feel more relevance

(e.g., activity and/or setting) would shape the stress – coping process. For instance, activity-involved recreationists are likely to employ coping strategies that preserve their ability to enjoy the activity. Ditton and Sutton (2004) found that anglers in Florida and Texas with high leisure activity involvement were less willing to substitute recreational activities than those with low leisure activity involvement. This is because recreationists with high activity involvement are less likely to expect that other outdoor activities to provide them with the same satisfaction or enjoyment they acquired from the preferred activity (Vaske, Donnelly, & Tweed, 1982). Instead, they are more likely to engage in other behavioral coping strategies (e.g., temporal or resource substitution) (Ditton & Sutton, 2004). Additionally, experienced recreationists have more knowledge of similar recreational setting alternatives and, consequently, have more setting options compared to novices (Havitz & Dimanche, 1997). Alternately, place attached recreationists are more likely to employ coping strategies (e.g., temporal displacement, rationalization) in response to encountering stressors that enable them to continue to enjoy the setting. Thus, I expect to see different moderating effects of leisure activity involvement and place attachment on the stress – coping process.

While stress and coping research has proliferated over the last several decades, most of the research has ignored cultural factors that affect one's stress level and selection of coping behavior (Moos & Swindle, 1990). Markus and Kitayama (1991) have identified the two types of self-construals (i.e., independent and interdependence self-construals) among European Americans and East Asians. Self-construal refers to the perceptions that individuals have about their thoughts, feelings and actions in relation to

others. Cultural psychologists have suggested that Americans of European descent possess independent self-construals, leading them to focus more on individual performance and ability to overcome a stressful situation. Later, coping researchers (Chun, Moos & Cronkite, 2006; Morling & Fiske, 1999) observed that these two types of self-construals result in the selection of different coping strategies under stressful situations. Since individuals with independent self-construals value goal-achievement and their personal ability to overcome a situation, they were more inclined to deal with the stressors in a direct way by engaging in behavioral coping strategies (Chun, et al., 2006). Alternately, people with higher interdependent self-construals (e.g., East Asians) accept whatever outcomes emerge (Morling & Fiske, 1999) and tend to engage in a cognitive coping strategies (e.g., rationalization) (Yeh, Arora, and Wu, 2006). While these differences may result in different perceptions of stressful encounters and the selection of coping behaviors, little is known about the role of self-construal in the stress-coping process within outdoor recreation contexts. Consequently, I also explored the moderating role of self-construal on this process using data collected from South Korean and North American recreationists.

In summary, I tested a path model examining the stress – coping process using data collected from recreationists in two different cultural contexts; the United States and South Korea. The path model reflects a hypothesized process in which recreationists encounter stressors within the recreation environment, construct appraisals of the stressor, and select coping strategies to accommodate the stressor. To date, researchers have yet to adequately explore the mediation of cognitive appraisal between the level of

stress and the selection of a coping strategy. As discussed earlier, one's appraisal of the stressful situation may differentiate the selection of the coping strategy (e.g., high likelihood of selecting behavioral coping strategies under controllable stressful situation). Although researchers (Lazarus & Folkman, 1984) have discussed the theoretical importance of cognitive appraisal in the stress – coping relationship, there has been a lack of empirical research examining the mediation of cognitive appraisal between the perception of stress and the selection of coping strategies in the outdoor recreation contexts. Researchers have focused more on part of the stress – coping process such as the relationship between the level of stress and coping (Miller & McCool, 2003), the factor structure of appraisal and coping (Schuster et al., 2003), and the relationship between the different types of coping strategies (Bouchard et al., 2004). Thus, I examined the relationship among stress level, cognitive appraisal, and coping strategies among to better understand how one's appraisal of stressors mediates the relationship between the level of stress and the selection of coping strategies (see Figure 1). In addition to the hypothesized model testing, I also examined the moderating role of place attachment and leisure activity involvement to determine the extent to which personal relevance with a recreation setting or activity affects the stress-appraisal-coping relationship. Last, I examined how one's self construal affects this hypothesized relationship.

1.2. Hypotheses

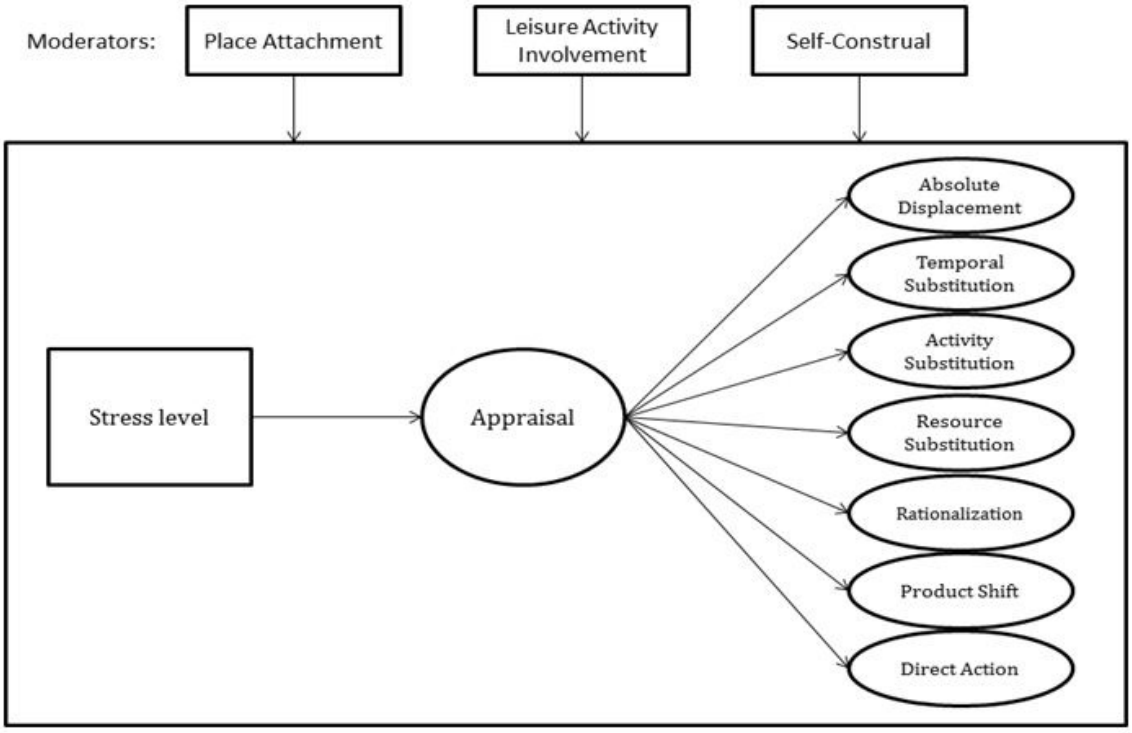


FIGURE 1 Hypothesized relationship between stress, appraisal, and coping.

H1. There is a structural relationship among recreationists' stress level, cognitive appraisal, and coping strategies.

H1-1.Recreationists who negatively appraise the stressful situation are more likely to show high level of stress.

H1-2.Recreationists who positively appraise the stressful situation will be more likely to engage in absolute displacement.

H1-3.Recreationists who positively appraise the stressful situation will be more likely to engage in temporal substitution.

H1-4.Recreationists who positively appraise the stressful situation will be more likely to engage in activity substitution.

H1-5.Recreationists who positively appraise the stressful situation will be more likely to engage in resource substitution.

H1-6.Recreationists who positively appraise the stressful situation will be more likely to engage in direct action.

H1-7.Recreationists who positively appraise the stressful situation will be less likely to engage in rationalization.

H1-8.Recreationists who positively appraise the stressful situation will be less likely to engage in product shift.

H2. There is a moderating effect of place attachment on the relationships between recreationists' stress level, cognitive appraisal, and coping strategies.

H2-1.For recreationists who have a higher level of place attachment, their perception of stress will be negatively related to their appraisal of the stressful situation.

H2-2.For recreationists who have a higher level of place attachment, their appraisal of the stressful situation will be negatively related to absolute displacement.

H2-3.For recreationists who have a higher level of place attachment, their appraisal of the stressful situation will be positively related to temporal substitution.

H2-4.For recreationists who have a higher level of place attachment, their appraisal of the stressful situation will be positively related to activity substitution.

H2-5.For recreationists who have a higher level of place attachment, their appraisal of the stressful situation will be negatively related to resource substitution.

H2-6.For recreationists who have a higher level of place attachment, their appraisal of the stressful situation will be positively related to direct action.

H2-7.For recreationists who have a higher level of place attachment, their appraisal of the stressful situation will be negatively related to rationalization.

H2-8.For recreationists who have a higher level of place attachment, their appraisal of the stressful situation will be negatively related to product shift.

H3. There is a moderating effect of leisure activity involvement on the relationships among recreationists' stress level, cognitive appraisal, and coping strategies.

H3-1.For recreationists who have a higher level of leisure activity involvement, their perception of stress will be negatively related to the appraisal of the stressful situation.

H3-2.For recreationists who have a higher level of leisure activity involvement, their appraisal of the stressful situation will be positively related to absolute displacement.

H3-3.For recreationists who have a higher level of leisure activity involvement, their appraisal of the stressful situation will be positively related to temporal substitution.

H3-4.For recreationists who have a higher level of leisure activity involvement, their appraisal of the stressful situation will be negatively related to activity substitution.

H3-5.For recreationists who have higher a level of leisure activity involvement, their appraisal of the stressful situation will be positively related to resource substitution.

H3-6.For recreationists who have a higher level of leisure activity involvement, their appraisal of the stressful situation will be positively related to direct action.

H3-7.For recreationists who have a higher level of leisure activity involvement, their appraisal of the stressful situation will be negatively related to rationalization.

H3-8.For recreationists who have a higher level of leisure activity involvement, their appraisal of the stressful situation will be negatively related to product shift.

H4. There is a moderating effect of self-construal on the relationship among recreationists' stress level, cognitive appraisal, and coping strategies.

H4-1.For recreationists who have stronger independent self-construals, their perception of stress will be negatively related to the appraisal of the stressful situation.

H4-2.For recreationists who have stronger independent self-construals, their appraisal of the stressful situation will be positively related to absolute displacement.

H4-3.For recreationists who have stronger independent self-construals, their appraisal of the stressful situation will be positively related to temporal substitution.

H4-4.For recreationists who have stronger independent self-construals, their appraisal of the stressful situation will be positively related to activity substitution.

H4-5.For recreationists who have stronger independent self-construals, their appraisal of the stressful situation will be positively related to resource substitution.

H4-6.For recreationists who have stronger independent self-construals, their appraisal of the stressful situation will be positively related to direct action.

H4-7.For recreationists who have stronger independent self-construals, their appraisal of the stressful situation will be negatively related to rationalization.

H4-8.For recreationists who have stronger independent self-construals, their appraisal of the stressful situation will be negatively related to product shift.

H5. Americans of European descent are more likely to have more independent self-construals than South Koreans.

H6. South Koreans are more likely to have more interdependent self-construals than Americans of European descent.

2. LITERATURE REVIEW

2.1. Stress

2.1.1. Conceptualization of Stress

The term “stress” originated in the engineering field and is defined as an external force that results in the temporary or permanent alteration in a structure or object (Lazarus, 1966). Many researchers in psychology or physiology adopted this meaning because it seemed to fit the concept of homeostasis, a widely accepted term in both of these fields. In this homeostatic perspective, stress results in disequilibrium in a system that produces a change in the mechanism (Lazarus, 1966). The study of stress in the U.S. began following WWII. Physicians and psychologists were interested in failures of soldiers to adapt to a military setting. They found that the conditions of battle could result in psychological or physiological disorders, which are now regarded as “stress.” A book entitled Men under Stress by Grinker and Spiegel (1945) helped establish the term “stress” while providing information about battle fatigue. Although they mainly emphasized the mechanism that cause battle fatigue, such as anxiety, fear of threats, and a need for defense, their work initiated the study of psychological stress. Since then, numerous books and articles have been published dealing with conditions that produce fear, anxiety, anger, and the influence these states have on adaptive functioning (Lazarus, 1966).

Early stress research can be divided into two perspectives: the stimulus and the response. Stress researchers first focused on the conditions that produced stress reactions

(e.g., disruption of life and loss of someone important). For the response side, researchers identified four distinct categories of stress reaction: reports of disturbed affects, motor-behavioral reactions, changes in the adequacy of cognitive functioning, and physiological changes. One important category of stress responses includes anxiety, aggression, depression, anger, or guilt. Motor behaviors such as muscle tension, speech disturbances, or tremors are important indicators of a stress response. Also, degrees of cognitive functioning illustrate the effect of stress on our thoughts, judgment, problem solving, and perceptions. For the last domain, a physiological change provides information about the nerve and hormone systems under stress.

Later, Seyle (1956) defined stress as a multidimensional phenomenon that disturbed the homeostatic balance of the body and was caused by physical, psychological, or social conditions. Several researchers (McGrath, 1976; Martens, 1987) also emphasized that stress is caused by an imbalance between situational dimensions and the capacity of the individual to adjust to them. This imbalance makes people feel stressed and impacts their performance and behavior. In the 1980s, some literature described stress as a phenomenon similar to state anxiety (Spielberger, 1983: Martens, 1987; Ewert, 1988), an emotional state that varies or fluctuates over time (Spielberger, 1983), can be characterized by tension, and is greatly related to a perceived threat. The perception of threat, in this case, is very subjective since it is determined by the individuals who experience the situation. Spielberger (1983) stated that anxiety states are low when people are not in stressful situations or when people do not perceive stressful situations as threatening.

In the field of psychology, Lazarus (1966, p. 2) defined stress as "a universal human and animal phenomenon that results from an intense or distressing experience and appears to be of tremendous influence on behavior." In his early work, Lazarus lamented the fact that the conceptualization and measurement of stress and other related terms (e.g., frustration, anxiety, or conflict) had been too diverse. He recommended that researchers stop using the term "stress" in a loose sense and use it to refer to more specific terms for the ultimate goal of understanding the processes involved. He also emphasized the transaction between individuals and situations generating stress.

The term "stress" has multiple meanings and there are a variety of existing terms referring to similar phenomena. However, Horvath (1959) noted that it is important that we use a proper definition of stress-related terms (e.g., anxiety, frustration, anger). Regardless of terminology, there is a need to identify the external and internal stimulus of stress and the mechanisms that determine when and in what form the stress reactions will occur (Lazarus, 1966). A philosopher of science, A. Kaplan, noted that having a closed meaning for stress concepts can hinder scientific progress. That is, some openness is inevitable, but it could also narrow the scope of our ideas (Kaplan, 1964, p. 70). From this perspective, many stress researchers have defined psychological stress in a broad way, encompassing the causes and the results of stressful encounters. Kaplan (1996) defined psychological stress as the "socially derived, conditioned, and situated psychological processes that stimulate any or all of the many manifestations of dysphoric affect falling under the rubric of subjective distress" (p.3-4). Lazarus (1966) also suggested considering stress as a general term for a whole variety of problems that

contain the stimuli that produce stress reactions, the reaction itself, and the intervening processes. Thus, stress can be understood not as a mere aspect of stimulus, response, or intervening construct, but as a collective term that includes these aspects (Lazarus, 1966). Later, Lazarus and his colleagues proposed the transactional theory of stress and coping, emphasizing stress as the outcome of situational and personal factors which inhibit individual's interaction with an environment. In their conceptualization, stress is affected by both one's personality (e.g., susceptibility) and one's circumstance (e.g., stressors). Jones and Bright (2001) expanded this notion, using the term "stress" for a wide range of environmental stimuli (stressors), stress responses, and other influential factors that affect the relationship between the two.

Consequently, this study utilizes Lazarus' definition of stress in which the conceptualization of stress embraces a wide range of stress processes: "a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his/her resources and endangering his/her well-being" (Lazarus & Folkman, 1984). This approach is called the transactional theory of the stress-coping relationship. More on this perspective will be discussed later.

2.1.2. Stress in Outdoor Recreation

There are many possible inhibitors in outdoor recreation including traffic jams, the unpleasant behavior of others, or illegal activities (Miller & McCool, 2003). Outdoor recreationists are often faced with situations that are potentially threatening or harmful, such as over-crowding (Ditton, Fedler, & Graefe, 1983; Manning & Valliere, 2001),

physical threats that people perceive in the outdoors (Ewert, 1988), and the difficulties of interacting socially in adventure recreation activities (Ewert, 1988; Robinson & Stevens, 1990). These detractors in outdoor recreation may produce stress, and ultimately reduce the quality of recreation experiences.

Some researchers (Jones & Hardy, 1989; Martens, 1987; Gray; 1987) have found several stressors in outdoor recreation activity. Stressors can be defined as "conditions of threat, demands, or structural constraints that, by the very fact of their occurrence or existence, call into question the operating integrity of the organism" (Wheaton, 1996). Gray (1987) proposed four categories of stressors in adventure outdoor recreation settings: intensity (i.e., concerns with self-efficacy), social interaction (i.e., concerns about social relationships in a group activity), novelty (i.e., concerns related to the uncertainty of going through an unfamiliar environment), and specific situations (i.e., concerns associated with threatening or dangerous situations). While there have been several ways to categorize stressors, this categorization provides insight on different causes of stress in outdoor recreation contexts.

Sometimes researchers define stress as daily hassles (Schuster et al., 2006; DeLongis et al., 1982). In general, hassles are everyday stressors "from minor annoyances to fairly major pressures, problems, and difficulties" (Kanner, Coyne, Schaefer, & Lazarus, 1981, p. 25). Some research on hassles (e.g., DeLongis et al., 1982) has focused on individuals' exposure to hassles over time, while others have looked more narrowly at specific daily hassles (e.g., Edwards & Trimble, 1992; Folkman & Lazarus, 1985). In outdoor recreation, for example, hassles could include

such things as the presence of litter or waste, poor water quality in a lake area, noise, conflict with other recreationists, or inadequate facilities. They could be independent stressors or originate from a larger event that causes a delayed perception of stress (Kanner, Coyne, Schaefer, & Lazarus, 1981). According to Schuster et al. (2006), forgetting to bring tent poles (a major stressful event) can result in a delayed perception of stress when searching for shelter or dealing with other group members influenced by the event. In this case, the cumulative perception of hassles is more stressful than individual stressors. For this reason, they measured both the frequency and intensity of stress to understand stress constructs. Although their findings suggested that the frequency of stress predicted coping behavior weaker than the intensity of stress, they did demonstrate a significant association between the frequency of stress and coping (Topf, 1985; DeLongis, et al., 1982). The intensity or the level of stress has been regarded as one of the important indicators of coping behavior (Miller & McCool, 2003; Schuster, et al., 2006). Miller and McCool (2003) found that outdoor recreationists reporting high levels of stress are more likely to displace from the recreational site or take direct action to reduce their stress. In contrast, they discovered that respondents reporting low levels of stress were more likely to choose a cognitive adjustment coping strategy such as rationalization. Schuster et al. (2006) tested several hypothesized relationships between intensity, the frequency of stress, and coping behavior. They found that the intensity of stress is a better predictor of coping behavior than the frequency of hassles in outdoor recreational settings.

2.2. Cognitive Appraisal

2.2.1. The Importance of the Appraisal for the Perception of a Situation

Cognitive appraisal refers to "the unique and changing relationship taking place between a person with certain distinctive characteristics (values, commitments, styles of perceiving and thinking) and an environment whose characteristics must be predicted and interpreted" (Lazarus & Folkman, 1984, p. 24). In stress and coping research, the concept of cognitive appraisal is regarded as an important mechanism that reflects the different degrees and kinds of reactions that people undergo. Lazarus and Folkman (1984) explained the reasons why we should understand the appraisal process. First, we need to know people's patterns of evaluation and reactions toward a stressful situation. Since individuals or groups are different in terms of their sensitivity and vulnerability to a stressful situation, it is hard to understand human variation under comparable conditions (Lazarus & Folkman, 1984). Some argue that there is an individual difference in response to stress. For instance, Strack & Coyne (1983) found that affective depression was explained by people's cognitive tendency to distort reality in their response to their social environments. Although stress researchers agree that some part of observed individual variations are the result of environmental differences, "this cannot be the whole story" (Lazarus & Folkman, 1984, p. 23). Instead, they commented that it is important to see the psychological situation, which is the result of the interaction between the environment and the person. For this reason, Lazarus and Folkman (1984) have tried to understand the stress and coping process as an interaction between individuals and their circumstances. Second, comprehending the appraisal

process helps us to understand how people distinguish various kinds of stressful situations. In order to overcome a stressful situation, individuals need to know if the situation is benign or dangerous (Lazarus & Folkman, 1984). Similar to animals that have a mechanism to identify dangerous predators, Lazarus and Folkman assumed that humans have innate evaluative perceptions to diagnose harmful, threatening, and challengeable situations. They believed that the cognitive appraisal processes are some sort of mediative reaction.

In traditional psychology, several authors have tried to understand the importance of the subjective meaning of any situation. For example, Murray (1938) distinguished the objective perception of a situation or environment from the significance of subjective evaluations as perceived or interpreted by individuals. Similarly, Lewin (1936) also emphasized the difference between an actual environment and the perception of it. For example, the psychological situation can be fundamentally different for a child and for an adult even though the environment is identical or nearly identical (Lewin, 1936). In addition, many other early psychological researchers (Bowers, 1973; Magnusson & Endler, 1977; Krohne & Laux, 1982) admitted that situations should be considered in terms of their significance to the individual. Also, in sociology, some symbolic interactionists (cf. Jessor, 1979) consider a cognitive perception of the situation important. Ekehammar (1974) characterizes the situation as “a function of the person through the persons’ (a) cognitive construction of situations and (b) active selection and modification of situations” (p. 2035). Thus, we must realize that an individual’s

perception of the environment, situation, and event are important before analyzing the specific ways people cope with a stressful situation.

2.2.2. Cognitive Appraisal in Stress Theory

Although many previous authors in the field of psychological stress have only used the term "appraisal" implicitly (e.g., Shannon & Isbell, 1963; Withey, 1962), Grinker and Spiegel (1945) explicitly mentioned that "appraisal of the situation requires mental activity involving judgment, discrimination, and choice of activity, based largely on past experience" (p. 122). After them, Arnold (1960) was the first researcher who tried to use a systematic treatment of the appraisal concept. She described appraisal as the cognitive determinant of emotion, which is a rapid and intuitive process that automatically occurs. However, she limited her explanation to only the effect of appraisal on the emotional reaction. In response, Lazarus and Folkman (1984) attempted to comprehend more complex and meaning-related cognitive activity caused by appraisal and gave an example to explain the importance of the appraisal of a situation. They noted that if we heard a loud fire alarm that arouses an auditory stimulus, we will consider how realistic the danger really is, unless we are panicked. Then we will evaluate what is happening and think about how we might deal with it. In sum, the fire alarm (stress) initiates a chain of cognitive activity that brings more complex thoughts, actions, reactions, and sequential adaptational responses. Janis and Mann (1977) proposed several questions with regard to appraisal, and suggested that it possibly shapes one's evaluation of an event following the decision making and coping processes. The

answers to the questions, “Are the risks serious if I don’t change? Are the risks serious if I do change? Is it realistic to hope to find a better solution? Is there sufficient time to search and deliberate?” (p. 70), will determine the quality of decision making. Lazarus and Folkman (1984) extended this notion to any event in which “the person feels his or her adaptive resources to be taxed or exceeded” (p. 27).

Cognitive appraisal is not just information processing but the process of categorizing a situation and an event. It is an evaluative mechanism that focuses on the importance of meaning in a situation, and it takes place continuously under the situation (Lazarus & Folkman, 1984). The appraisal theory distinguishes primary appraisal and secondary appraisal by recognizing the two different evaluative stages. However, the terms “primary” and “secondary” do not mean either the order of the appraisal event or that one is more important than the other (Lazarus & Folkman, 1984). Here, these two distinct appraisals will be reviewed based on the discussion of Lazarus and Folkman (1984).

Primary appraisal refers to a set of cognitions concerning the impact or importance of a stressful situation for an individual (Bouchard et al., 2004). In this stage, people would ask themselves, “Am I in trouble or benefitting?” and “What, if anything, can be done about it?” In general, researchers have mentioned three types of primary appraisal: irrelevant, positive, and stressful. Perceiving a situation as not related to them at all is an example of irrelevant appraisal. Appraisal of irrelevance refers to a situation in which people have nothing to either lose or gain from the event. Once any event stimulates an individual, he or she considers whether or not it is relevant. If it is

irrelevant, he or she does nothing. The second type of primary appraisal is benign-positive. It occurs when people think the outcome of a situation or event is beneficial for them and enhances their well-being. As a result of the benign-positive appraisal process, people may experience pleasurable emotions. The third category is stress appraisal. It includes the perception of potential harm, loss, threat, or challenge through an event people encounter.

Secondary appraisal evaluates what can be done in response to a stressful encounter. In this type of appraisal, an individual will be concerned about his or her resources or options to enhance the situation (Bouchard et al., 2004). In this stage, several coping options will be examined and appraised by individuals to decide the best way to react to a given situation. Regardless of whether the primary appraisal determines the situation as negative or positive, something should be done as a response. This activity is an important aspect of stressful encounters in that the outcome relies on what might be done as well as on what is at stake (Lazarus & Folkman, 1984). It is a more complex evaluative process that considers (a) which coping options are available, (b) the likelihood that the coping option will work as one expects, and (c) the possibility that one can employ a specific strategy effectively. Regarding the second and third categories, Bandura (1977, 1982) made a distinction between the outcome expectation and efficacy expectation. The former refers to one's expectation that a selected behavior will result in certain outcomes. However, the latter is one's confidence that he or she can effectively complete the behavior.

In brief, people evaluate the condition or impact of a stressful situation by primary appraisal (positive, negative, or irrelevant). Then, if they think the situation will affect them, they begin secondary appraisal in which they examine the possible coping options that can enhance the situation. These two parts of the appraisal process interact with each other to define the degree of stress the individual perceives and shape the quality or content of the reaction (e.g., coping behavior). The most important element of the appraisal process to consider has been argued to be the sense of control individuals retain in stressful situations (Lazarus & Folkman, 1984). There can be situations where some people actually have little opportunity to enhance the situation, which causes feelings of helplessness. The sense of control over oneself and environmental conditions is an important indicator of how people evaluate a situation and what kind of strategy they intend to use. Accordingly, the aspects of secondary appraisal that Lazarus and Launier (1978) developed are designed to determine the extent to which individuals perceive they have control in a stressful situation. Several studies (Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986; Schneider, 1996; Miller, 1997) have tried to operationalize the secondary appraisal items in terms of describing whether one perceives a situation as controllable or not. Later, Schuster et al. (2003) discovered that the items of the secondary appraisal measure the general controllability of the situation. Their findings indicate an acceptable fit for the secondary appraisal model with four different items measuring one's ability to control a situation. They commented that further investigation of the secondary appraisal construct is needed because two of the

items are non-significant. However, they recommend considering the secondary appraisal construct as a single factor since it provides a more parsimonious model. The appraisal stage plays an important role in shaping stress perception and reaction. This is the interactive process that impacts the ways people cope with and respond to stress (Schuster et al., 2003). This notion is supported by Lazarus and Folkman's (1984) transactional stress and coping model, which proposed that some influencing factors (i.e., personal and situational factors) cause a stressful situation, and that people begin to appraise the situation in two ways: 1) whether it is associated with me or not and 2) whether I have an effective coping strategy. After finishing the appraisal of the situation, people select and use particular coping strategies to enhance the situation. Last, coping behaviors commonly result in a positive or negative outcome depending on the effectiveness of the selected coping strategy. Therefore, the role of appraisal in the relationship between stressful factors and coping behavior is that it allows individuals to investigate and analyze a situation in order to adopt the best coping strategy.

2.3. Coping

2.3.1. Early Approaches to Coping

When threats occur, a behavioral or psychological process is initiated to mitigate or diminish the threat. This is called coping (Lazarus, 1966). Coping is a cognitive activity based on appraisal of the threatening conditions and the consequence of the coping behavior (Lazarus, 1966).

The history of stress-coping research is rooted in Freud's earliest study of psychological defense. He defined "defense" as "the general term for the ego's struggle against unpleasant ideas and feelings." Most of his work is based on the ways in which individuals react with unpleasant feelings/emotions by controlling them or introducing other defensive strategies. Freud's daughter, Anna, expanded his conceptualization and suggested that people have a preferred defensive mechanism or style to deal with stressful situations. From the 1960s, researchers began to use the term "coping" to explicate a defensive mechanism toward stressful events (Parker & Endler, 1996), and coping research gradually developed as a distinct field. During the 1960s and 1970s, Freudian ideas influenced coping research especially for people's reactions toward tragic life events (e.g., impending death or the death of loved ones). For example, Kubler-Ross (1970) found that people who are facing death go through different defensive stages, and his findings can be understood as defensive mechanisms suggested from earlier Freudian works. He noticed that those people will experience several coping stages such as denial, anger and resentment, bargaining with medical staff or God, and they will face feelings of depression and a sense of loss. If they no longer deny reality, they finally come to a stage of acceptance. Although this multi-stage approach to understanding coping behavior has been utilized by many professionals in counseling and other caring fields, psychological researchers have criticized this notion because they believe it is scientifically untestable (e.g., Eysenck, 1990). However, it is hard to deny the fact that the psychoanalytic approach provided a fundamental understanding of coping using defensive mechanisms (Jones & Bright, 2001).

Most coping research after the 1970s had been couched in the framework provided by Lazarus and his colleagues (Lazarus, 1966; Folkman & Lazarus, 1980; Lazarus & Folkman, 1984). The trend of coping research is mostly based on ego-psychology and the concept of defense (Haan, 1969; Vaillant, 1977). Lazarus (1966) commented that coping research should be extended beyond the study of defense and suggested expanding it to embrace a broader range of cognitive and behavioral responses that people adopt to manage stress. His research on coping focused on the role of cognitive appraisal, which is the way in which the individual evaluates or analyzes a problematic situation. In fact, it determines the quality of emotional experiences people may have while they are in a troubled environment. Using Lazarus' cognitively oriented theory, many researchers have studied information processing in stressful situations (e.g., Leventhalet et al., 1980) and the relationship between emotion and cognition (e.g., Simon, 1967). The cognitive model of coping assumes that an individual's appraisal about the threatening situation is the point at which the coping process begins. The appraisals are often characterized by intense and negative emotions (Folkman & Moskowitz, 2004). For example, people try to decrease negative emotions provoked by unpleasant events. Emotions are continuously integral to the process of coping—from a stressful encounter to a coping resolution. Positive emotions will appear when people resolve the situation in a successful way. However, negative emotions will predominate if people cannot positively resolve the situation. Although most coping research has focused on negative emotions, there have been recent efforts to understand the role of positive emotions in the stress process (Folkman & Moskowitz, 2004).

As discussed earlier, Lazarus and Folkman defined coping as "thoughts and behaviors that people use to manage the internal and external demands of situations that are appraised as stressful" (Folkman & Moskowitz, 2004). The measurement of coping has developed from the conceptualization of these coping thoughts and behaviors (Billings & Moos, 1981; Pearlin & Schooler, 1978). After the early 1980s, numerous empirical studies have been published regarding the measurement, conceptualization, and empirical outcomes of coping research (Somerfield & McCrae, 2000). The defense-focused approach in coping research continued during the 1980s while the cognitive approach prevailed since the 1980s (Folkman & Moskowitz, 2004). Folkman and Moskowitz (2004) asserted that coping is a complex and dynamic process that involves the person, the environment, and the relationship between the two. Although many clues have been found that explain the coping process (e.g., the role of appraisals and emotion in coping and the antecedents and outcomes of the coping process), Folkman and Moskowitz (2004) found the need to understand the actual influence of coping on psychological, physiological, and behavioral outcomes in terms of short-term and long-term investigations.

2.3.2. The Dispositional and Situational Perspective of Coping

Instead of adapting the psychoanalytic approach to coping, psychologists have widely discussed the coping mechanisms in terms of two approaches: dispositional and situational. The dispositional perspective mainly considers whether individuals have distinctive or preferred types of coping or dispositions that allow them to cope better in

certain situations. The other view, the situational perspective, focuses on the coping process and whether or not the specific coping strategies are dependent on various situations.

Those who view coping as dispositional (Bolger, 1990; Byrne, 1961) concentrate on an individual's tendency to select and use different coping behavior in a stressful situation. They believe there are certain dispositional tendencies and coping styles that are effective for achieving positive results such as a high perception of well-being and better health. According to this view, people react to a new situation with habitual ways of dealing with stress. The most evident coping styles in this view are avoidant and approach. Among various conceptualizations of this distinction, repressors/ sensitizers and monitors/blunters are the most commonly discussed ways of coping based on the avoidant and approach styles. According to the Freudian notion of repression, people unconsciously remove unpleasant memories from their mind so that they no longer need to recall them. The people categorized as repressors have an avoidant style of coping. In contrast, sensitizers try to reduce anxiety by approaching such threats (Jones & Bright, 2001). They try to think about the stressful factors and find a way to control them. Currently, the term "sensitizers"' is not commonly used in coping literature. Another way to categorize avoidant and approach styles of coping behavior is by distinguishing between monitors and blunters. This distinction focuses more on the information-processing behavior of people under stressful situations. While monitors are people who seek out information specifically related to the stressors, blunters are more likely to avoid this type of information (Miller & Mangan, 1983). Recent research has focused on

how monitors cope with potential life threatening stressors (e.g. Schwartz, et al., 1995; Miller, et al., 1996). The results showed that monitors prefer to seek information but, when the threat was severe and uncontrollable, they were more likely to avoid thinking about the stressful situation (Miller et al., 1996).

Later, dispositional coping researchers tried to find a relationship between coping styles and personality traits such as optimism or negative affectivity (Jones & Bright, 2001). Hewitt and Flett (1996) proposed three alternative models with regard to the relationship between personality, coping and maladjustment. The first, the meditational model, assumes that personality determines coping style, which, in turn, affects the degree of maladjustment. The second is an additive model, in which personality and coping independently affects maladjustment. The last model is an interactive model, whereby personality factors are associated with coping variables. These models have been tested by a number of researchers. Bolger (1990) noticed that ineffective coping styles mediate the relationship between neuroticism (as one of the personality factors) and anxiety level. That is, people who showed high neuroticism are more likely to choose ineffective coping styles, which in turn results in increased distress. This result supports the perspective that personality and coping are closely related to each other. However, people who think coping behaviors are dependent on stressful situations have argued that personality factors are not very significant determinants of coping strategies.

The situational perspective of coping is widely accepted among coping researchers and it is mostly grounded on the works of Lazarus and his colleagues. His transactional theory of stress and coping behavior reflects this perspective because it

views coping as a process that varies depending on the specific situation (Lazarus and Folkman, 1984). Lazarus and Folkman (1984, p. 143) stated that, in all stressful cases, there is an "unfolding, shifting pattern of cognitive appraisal and reappraisal, coping, and emotional processes." While they do not deny the fact that individuals may be influenced by dispositional factors, they argue that the dispositional view oversimplifies the complicated patterns of coping on certain occasions. Here, it is important to understand what is meant by the "appraisal" Lazarus mentions when he describes the coping process. He proposes two types of appraisal: primary and secondary. Primary appraisal is when people evaluate the potential stressors. Secondary appraisal refers to the process of evaluating coping options and trying to find a way to overcome harm or improve benefits.

Lazarus contends that the appraisal adopted for the stressful situation will influence the type of coping strategy people will use and the emotional responses they will have. In stress theory, appraisal is important for determining how people cope, and eventually, it mediates the relationship between stressors and coping (Jones & Bright, 2001). In Lazarus' work, he divided coping into two categories: problem-focused and emotion-focused. Problem-focused coping is aimed at dealing with and managing the stressor. It is more likely to be used when the situation is relatively easy to change. Problem-focused coping contains strategies, such as learning new skills, which people can use to reduce the potential stress. On the other hand, emotion-focused coping concentrates on dealing with the emotion that one feels because of the stressor. It is likely to be used when the appraisal signifies that nothing can be done to change the

stressor. There are many emotion-focused coping strategies including expressing emotion, trying to view the situation from a different perspective, or engaging in alternative activities such as shopping or drinking in order to avoid thinking about the stressor.

During the past quarter century, psychological research on stress has conceptualized the stress process with only a direct relationship between stressful life events and negative outcomes that people have in response to the stress (Rahe, 1987). However, early researchers found that they cannot fully understand the negative outcomes only with the frequency or number of stressful events in one's life. Thus they found the mediating role of coping strategies between stress and negative outcomes, which provide better understanding of the stress-response process. For instance, some people stayed healthy even after exposure to stressful situations, and others recovered their health rapidly if they had an effective way of managing stressful events (Holahan, Moos, & Schaefer, 1996).

2.3.3. Theoretical Changes for the Stress-coping Relationship

Early coping research used a stimulus-response (S-R) approach which emphasized input and output processes. In behaviorism, S-R theory has provided a fundamental understanding of animal and human learning behavior (Pavlov, 1927; Thorndike, 1898). It assumes that certain types of stimuli produce certain types of behavioral response, especially in repeated exposures to a stimuli-evoked environment. In coping research, researchers looked at major life events as stimuli and then measured

the physiological responses (e.g., the probability of having cancer or cardiovascular disease) to stressful events. This approach made sense in terms of looking at general trends in stress-coping relationships such as the overall effects of long working hours and health (Jones & Bright, 2001). However, later coping research has criticized this approach as being too simplistic and overlooking individual variations in responses. Thus, the interactional approach (Cohen & Wills, 1985) was introduced, which includes the investigation of individual factors (e.g., personality), the environment (e.g., available resources), and the outcomes of stress and coping (e.g., well-being and the level of ill effects experienced).

A considerable amount of research has been developed to understand the ways in which various factors interact with stress. In general, the interactional approach contains three aspects: a) environmental events or situations that evoke stress, b) intervening variables such as individual differences (e.g., personality traits and coping behaviors), and c) strain outcomes (e.g., anxiety and physical symptoms) (Jones & Bright, 2001). Although this approach considers the importance of interaction between stress-related factors such as stressful events, individual differences and resources, and outcomes, it does not take into account the intensity of stressful events and situations. In response, Lazarus and colleagues have argued that a stressful environment cannot be separated from individual characteristics without removing the concept of stress (Lazarus et al., 1986). Thus, they proposed a transactional theory which emphasizes a relationship between the individual and the environment. Lazarus (1990, p. 3) stated that “Once a person has appraised a transaction as stressful, coping processes are brought into play to

manage the troubled person-environment relationship, and these processes influence the person's subsequent appraisal and hence the kind and intensity of the stress reaction." He emphasized a change from stressors or outcomes that could be mediated by other variables to the process in which a person appraises a situation as stressful (Jones & Bright, 2001). With a similar perspective, Lazarus and Folkman (1984) defined stress as a relationship between the person and the environment which involves one's appraisal when taxing/exceeding his/her resources and endangering his/her well-being. They regard stress as a complex and multivariate process (Jones & Bright, 2001). Researchers who accepted Lazarus' view of stress have covered a different range of the stress process—the environment, individual differences, the way one appraises the environment, and coping behaviors. This transactional approach has been applied to diverse stress-coping research recently. While stimulus-response and interactional approaches are essentially dealing with the structure of the relationship between stressor (input) and strain (output) with or without considering individual differences, the transactional approach toward stress and coping investigates a mechanism between the two variables (e.g., an intervening variable such as social support). Transactional theory focuses on a process that shifts over time and how individuals appraise the stressors and the coping strategies (Lazarus & Folkman, 1984). Thus, this approach tries to examine types of stress and coping over time. Since research of the transactional approach has provided more detailed information about individual responses toward stress, counselors are now able to provide more effective help and support to those individuals exposed to stressful situations (Jones & Bright, 2001). Although the latest stress-coping researchers

have a tendency to lean toward the transactional approach, the theoretical approach that they apply relies on the purpose of their research or the focus of their theoretical interest.

2.3.4. Coping Behavior in Outdoor Recreation

Coping researchers (Lazarus & Folkman, 1984; Taylor & Schneider, 1989) have identified two types of coping strategies. Emotional-focused coping is used when there is no solution for dealing with stress. By engaging in emotionally-focused coping, people try to reduce emotional distress by avoiding the situation, keeping a psychological distance from the stressors, or finding positive values or comparisons in unpleasant events (Schuster et al., 2006). One emotion-focused strategy is dissonance reduction, in which a person tries to maintain cognitive consistency and rationalize stressful situations as pleasant (Hammitt & Patterson, 1991; Schneider & Hammitt, 1995). Recreationists use the emotion-focused coping strategy under stressful situation (Miller, 1997; Schneider, 1996). Another strategy, problem-focused coping, occurs if the situation is appraised as stressful or challengeable (Schuster, et al., 2006). In this strategy, people try to define the stressful situation, consider alternative solutions, and choose better alternatives. It includes the reduction of the source of stress and the level of distress generated by stressors. Spatial displacement (Hammitt & Patterson, 1991; Schneider & Hammitt, 1995) and changing the behavior of oneself for better results (Lazarus & Folkman, 1984) are other examples of problem-focused coping strategies.

The coping literature regarding outdoor recreation has introduced two other major coping mechanisms: behavioral changes and cognitive processes. Although there

have been numerous ways to conceptualize coping, behavioral changes such as substitution behavior and cognitive processes dealing with stressful recreational situations could be considered as distinctive categories of coping mechanisms. While some researchers argue that coping can be divided into two general categories (Schuster, et al., 2003, 2006), Lazarus and Folkman (1984) noted that emotionality should be paired with cognition for measurement of the coping process. Thus, Miller and McCool (2003) introduced the categorization of coping as behavioral changes and cognitive processes. Behavioral changes include different kinds of substitution behavior: temporal substitution, resource substitution, activity substitution, and absolute displacement (Selby & Vaske, 1991). Substitution is defined as "the interchangeability of recreation experiences such that acceptably equivalent outcomes can be achieved by varying one or more of the following: the timing of the experiences, the means of gaining access to the setting, and the activity" (Brunson & Shelby, 1993, p. 69).

Temporal substitution refers to a situation in which recreationists change the time they visit the site when they are faced with a stressful situation. People who adopt resource substitution would visit a different location. Activity substitution indicates altering the activity when confronted with stressors. Absolute displacement, an extreme substitution, would occur when recreationists determine never again to visit the recreational area due to the stressful situation they encountered there. In addition to these substitution behaviors, direct action also belongs to behavioral coping. Although it is not related to substitution behavior, it is about behaviors directed toward changing undesirable condition. Recreationists can report unpleasant situations directly to the

personnel who serve the recreational area, with the expectation that the personnel will then improve the situation. This can be done by writing a letter to the service provider or becoming involved in political action for changes in the recreational setting (Ziemann & Haas, 1989). Miller and McCool (2003) indicated that direct action may produce a high level of stress because it takes a great deal of energy to complain.

The other general domain of coping is called cognitive processes and includes product shift and rationalization (Heberlein & Shelby, 1977; Stankey & McCool, 1984; Schneider & Hammitt, 1995). Shelby, Bregenzer, and Johnson (1988) defined product shift as a cognitive coping process whereby people change the definition or the expectation of the recreational experience or the meaning of the recreational setting. The ultimate goal of engaging in a product shift is that people wish to maintain a maximum level of satisfaction while not removing themselves from the place temporally or physically (Miller & McCool, 2003). Miller and McCool (2003) reported that recreationists tend to cope with detracting factors in a cognitive way when they experience low levels of stress. Rationalization, another cognitive coping process, represents "a process whereby recreationists reevaluate an undesirable situation in a more favorable light" (Miller & McCool, 2003, p. 262). Rationalization is rooted in cognitive dissonance theory, which explains human efforts to reduce psychological imbalances between expected outcomes and actual situations (Festinger, 1957). This has been discussed in recreational literature in order to examine inconsistencies that exist between recreationists' experience of stressful factors and their desired recreational experience. Since recreationists usually invest a considerable amount of resources (e.g.,

time, money, and effort) in their recreation activities, some people tend to rationalize stressful situations in a positive way regardless of the inhibiting conditions (Manning, 1999). They want to have a good time in spite of difficulties they may confront.

2.4. Place Attachment

2.4.1. Conceptualization of Place Attachment

Place gives a wide definition of a space, from a geographical location or destination to the status of position or ownership. As a human geographer, Tuan (1979) defined place as a center of meaning or field of care that highlights human emotion and relationships in a given space. He made a distinction between space and place in terms of meaning people ascribe to the meaningful space. He said that once we get to know the space better, we give a meaning to it, and finally, it becomes place. This notion has been widely accepted by place researchers interested in the relationship between place and people.

Place attachment is one of the most widely studied topics in place literature. In general, place attachment refers to the affective bond that individuals share with a particular setting (Low & Altman, 1992). The study of place attachment began with attachment theory in social psychology. Social psychologists who study attachment processes believe that babies have an innate emotional and biological attachment to mothers because of the tendency to seek a secure environment (Bowlby, 1988). Applying this basic concept of a bond with a secure object, attachment theory has

provided a conceptual framework for the study of the affective connection between people and physical environments (Fried, 2000).

Many place researchers have defined place attachment as an emotional construct that describes the affective bond that individuals associate with a meaningful place (Hidalgo & Hernandez, 2001; Mesch & Manor, 1998; Milligan, 1998; Shumaker & Taylor, 1983). At the community level, the affective bond between people and residential or local settings has been explored (Fried, 2000; Shumaker & Taylor, 1983). Shumaker and Taylor (1983) defined place attachment as a positive and affective association between individuals and their residential environments. Also, Fried (2000) emphasized that there is an affective tie between residents and local environments.

Researchers in natural resource and recreational environments recognize the affective importance of place attachment (Eisenhauer, Krannich, & Blahna, 2000; Kaltenborn & Williams, 2002; Williams & Roggenbuck, 1989). Eisenhauer et al. (2000) stated that place attachment represents a unique kind of sense of place that has important implications for managers of public lands and social scientists concerned with natural resource issues. They noted that the emotional aspect is important because it involves strong sentiments about places that go beyond its use value. They further proposed that these attachments are important considerations for social science researchers who want to understand the wide variety of connections people have with natural areas. In previous place attachment literature, researchers have found that place attachment specifies an emotional interaction with a place and that these emotions are typically shown as positive. However, Manzo (2003) noticed that most place literature has ignored the

negative aspect of place attachment. She also criticized empirical studies that do not fully embrace all of the important dimensions that the attachment theorists suggest. Since place research in community sociology is limited to only a positive affect of place attachment in residential areas, she expected that people's relationships with nature or public space would expand our understanding of emotionality as well as other aspects of place attachment. This is a meaningful statement because place literature in leisure studies provide empirical evidence that shows us how places outside of the residential or local area are significant to recreationists (Bricker & Kerstetter, 2000; Kyle, et al., 2004), how the recreational places have altered people's self-conception (Kaltenborn & Williams, 2002), and the dimensionality of place attachment varying by the recreational context (Kaltenborn, 1998; Kyle, et al., 2005).

Beyond the emotional aspects, place attachment is also recognized as the cognitive meanings and behavioral patterns people associate with place (Low & Altman, 1992). Stedman (2002, 2003) noted that there are aspects of sense of place that are more cognitive. He used the term "place meanings" for these dimensions, which is separate from place attachment. Some authors have failed to distinguish "meaning" from the sense of place. According to Kaltenborn (1998), sense of place is the broad realm of environmental meaning and it is thought of as a collection of place meanings that represent attachment to a place. However, Stedman (2003) noted that meanings are considered as both symbolic and evaluative beliefs. He also argued that place meanings can be differentiated by time independently of place attachment. His study found that "even if overall levels of attachment do not change as a result of changes to the physical

landscape, the basis of attachment (the meanings that people are attached to) may change dramatically" (p. 680). Although some argue that the sentiments and place meanings are similar aspects of place attachment, previous place literature shows that it may be useful to consider the two concepts separate for the reasons Stedman noted. Milligan (1998) also acknowledged the role of cognition in the development of place attachment. Her study introduced the concepts of interactional past and interactional potential. Individuals have experiences and memories from when they were in a physical setting (interactional past), and based upon these past experiences, they developed expectations for what may happen in that place in the future (interactional potential) (Milligan, 1998). She noted that place attachment could be understood on these different levels, the past and the potential.

To understand the various characteristics and psychometric properties of place attachment, there is a need to discuss the dimensionality of the place attachment construct. There have been many empirical studies exploring the dimensionality of place attachment (Williams & Roggenbuck, 1989; Kyle et al., 2004, 2005; Moore & Graefe, 1994). Attachment to place has been theorized and empirically supported to be composed of several dimensions. Most widely, place attachment has been conceptualized as a two-dimensional construct (Williams & Roggenbuck, 1989): place identity, which explains the extent to which one identifies emotionally with an area or environmental setting; and place dependence, which is associated with people's functional attachment to place that facilitates their needs within a setting. Specifically, place identity refers to the cognitive connection between the self and the physical

environment (Proshansky, Fabian, & Kaminoff, 1983). Place dependence is a functional attachment based on the setting's ability to facilitate a person's desired outcomes (e.g., support recreational experiences) (Stokols & Schumaker, 1981). While place identity is more about the symbolic and emotional aspects of place attachment, place dependence is related to a functional value ascribed to a setting that arouses one's attachment to place. However, there exists a view that place attachment is an interplay of affect and emotions, knowledge and beliefs, and behaviors and actions in reference to a place (Low & Altman, 1992). This statement has been supported by many studies (Halpenny, 2006; Moore & Graefe, 1994).

After the recognition of the two prominent dimensions (place identity and place dependence), several authors noted the importance of the affective aspect of attachment that people associate with places (Jorgensen & Stedman, 2001; Kyle, Mowen, & Tarrant, 2004; Manzo, 2003). The affective dimension of attachment was usually combined with the place identity dimension rather than considered as distinct. However, Kyle et al. (2004) noted that place affect is distinct from place identity and only measures the affective component of place attachment. Since the development of the place attachment construct was grounded on the definition of attachment as "an affective bond between people and place," it is natural to regard the affective source of attachment as one distinct dimension of place attachment. Jorgensen and Stedman (2001) used attitude theory to identify several distinct dimensions of sense of place: place identity, place dependence, and place attachment. They defined sense of place as an overarching term that includes associations between human beings and spatial settings (Shamai, 1991). To

measure these three dimensions, they operationalized place attachment as an emotional connection to a place. They asserted that these three dimensions represent the emotional (attachment), cognitive (place identity), and behavioral (place dependence) aspects of human-place association. Thus, they also treat place attachment as an affective domain that explains a part of human-place association.

Last, social bonding has been discussed by environmental psychologists (Hidalgo & Hernandez, 2001; Low & Altman, 1992; Milligan, 1998). Since a place provides the context for social relationships and shared experiences, they found there is a meaningful social interaction that facilitates people's attachment to places. Thus, there is a competing argument about the dimensionality of place attachment. Milligan (1998) also noted that the importance of social interaction occurred in a favored place. She stated that a physical setting becomes a social stage, and both physical and social interactions are meaningful for emotional bonds between individuals and physical sites.

The dimensionality of place attachment differs based upon the context or the purpose of study. In this study, the four dimensionalities of place attachment (place identity, place dependence, social bonding, and affective attachment) suggested by Kyle et al. (2004) will be used to recognize a whole spectrum of place attachment that influences the degree of stress and the way of coping in a recreational context.

2.4.2. The Role of Place Attachment in the Stress-coping Relationship

Little is known about the specific role of place attachment in the stress-coping relationship in outdoor recreational settings. However, several works have discussed the

influence of place attachment in the appraisal of stressful situations (Peden & Schuster, 2008), crowding (Budruk, Stanis, Schneider, & Heisey, 2008), and setting conditions (Young et al., 1991; Daigle et al., 2003).

Mostly, place attachment has been argued to influence how one perceives setting conditions. For the relationship between appraisal and place attachment, Peden and Schuster (2008) observed that place attachment influenced stressful appraisals of social and managerial conditions of wilderness areas while experience use history (recreationists' total visits and frequency of visitation over a given period of time) did not have any influence on one's appraisal of the setting conditions. Importantly, the characteristics of place attachment dimensions show us how place attachment influences one's perception of setting conditions. Usually, there have been two distinctive dimensions of place attachment: place dependence and place identity (Kyle et al., 2004; Moore & Graefe, 1994; Williams & Roggenbuck, 1989). Since place dependence refers to functional attachment, it implies that people will reject similar alternative sites if they have this type of functional attachment. Place identity may develop slowly while people interact with specific environments and recognize their self-identity within the settings.

These two dimensions of place attachment have an influence on recreationists' perception of setting stress (Peden & Schuster, 2008). For instance, people who feel high functional attachment (place dependence) are more likely to believe that certain behaviors of other recreationists are improper within the setting because it inhibits their own recreational activity (Vorkinn & Riese, 2001). They expect to satisfy their recreational needs, but, when this is hindered by others' behaviors, they easily perceive

the situation as more stressful. With the same perspective, people who show high place identity have a tendency to recognize that certain recreationists are responsible for particular negative effects on the resource or social setting (Watson & Niccolucci, 1992). More recently, researchers have found that as place attachment increases respondents become more sensitive toward site conditions (Warcheza and Lime, 2001; Young, et al., 1991). Warzecha and Lime (2001) reported that a high place attachment score predicts a lower tolerance for watercraft encounters among recreationists. Similarly, Young et al. (1991) observed that people who have a high involvement to place have stricter expectations of the setting conditions than people who have a low involvement to place. In other words, people who have high involvement with the place expect to see a lower number of people while they hike along the trails. If we see involvement as the antecedent of attachment (Kyle et al., 2004), the findings of Young et al. (1991) suggest a relationship between place attachment and the perception of crowding or stress in an outdoor recreational context. Further, different dimensions of place attachment have predicted different perceptions of social and environmental conditions in a recreation area (Kyle, et al., 2004). These findings indicate that place identified recreationists were more likely to perceive the disruptive social and environmental conditions encountered along the trail as more problematic. However, place dependent recreationists are less sensitive to problematic setting conditions. They implied that place attachment dimensions work differently in the perception of setting conditions, such as crowding, which typically produces stress in outdoor recreation settings. Another study by Smaldone, Harris, Sanyal, and Lind (2005) showed the association between place

attachment and visitors' awareness of park conditions. They reported that attached visitors who have a special attachment to a place within the Grand Teton National Park are more aware of the critical issues in the park area than those who do not have any attached places. Thus, the level of place attachment is likely to influence the amount of knowledge (e.g., awareness of the critical issues related to the condition of the park) an individual has about the park.

Based on the empirical studies that explored the role of place attachment in the perception of stress or inhibiting conditions in recreational settings, I would like to assume that the degree of attachment varies people's perception of stress while they are exposed to the recreational setting. Specifically, it is expected to see the relationship between stress and coping behavior vary based on the degree of one's attachment to the setting.

2.5. Involvement in Leisure

2.5.1. Early Conceptualization of Involvement

The study of involvement was first introduced in the fields of social psychology (Allport, 1943; Sherif & Cantril, 1947) and consumer behavior (Costley, 1988). In general, involvement refers to the association between the attitude object (e.g., a product or leisure activity) and the perception of the self or ego (Kyle, 2001).

In the early study of involvement, researchers emphasized the social aspects of the ego and self (Sherif & Cantril, 1947; Allport, 1943; Sherif, Sherif, & Nebergall, 1965). Sherif and Cantril (1947) thought that attitudes defined one's status and gave

some relative role to a person with regard to other individuals. They also noted that all kinds of values, goals, or norms are characterized by group activities and social situations which represent social relationships. Thus, a kind of striving to have a social relationship eventually shows "one's desirable values that will make his/her status or position secure" (Sherif & Cantril, 1947; pp. 115). Allport (1943) introduced a social aspect of ego by saying that ego influences the social part of man. Sherif and Cantril (1947) understood ego involvement as a process of deciding a reference point from which to determine one's importance in social behavior and reactions. When a situation is related to the individual, even unconsciously, it is said to be ego involvement (Sherif & Cantril, 1947).

Some attitude theorists have provided a slightly different perspective of ego involvement. For example, Ostrom and Brock (1968) noted that an ego-involved attitude basically depends on the way in which one defines oneself. This definition of oneself also relies on social and personal values possessed by the individual. Ostrom and Brock (1968) proposed that the attitudinal involvement increases if the relationship is strong between one's attitude and the social and personal values about the attitudinal object, or if the values are more central to oneself.

After early researchers found the importance of ego involvement and the social aspects of it, a wide range of involvement research developed a variety of conceptualizations of involvement. For instance, Greenwald (1988) proposed three major meanings of ego-involvement. The first concerns evaluation by others, which occasionally refers to impression management. The second concerns self-evaluation,

which can be operationalized as self management. The last concerns keeping one's values, also known as value management. Although these three characteristics are different in terms of the aspect of the self that is aroused, they all relate to the activation of one's self-concept (Kyle, 2001).

In consumer behavior literature, researchers have examined involvement using the concept of self-perception. They understand "personal relevance" as the fundamental characteristic of involvement (Petty & Cacioppo, 1981; Richins & Bloch, 1986). That is, the degree to which one perceives an object, situation, or product as personally relevant is an essential characteristic of involvement in consumer behavior. The perceived association between one's needs, goals, and values and the attributes of the products (Celsi & Olson, 1988) is recognized as the most important concept of personal relevance in consumer literature.

The two forms of involvement include enduring and situational. Enduring involvement refers to an individual's commitment. It is called enduring in that one's personal values, which are less susceptible to change by situational influences, determine the degree of importance for an activity (Kyle & Chick, 2004). Researchers who have studied the enduring aspect of involvement often emphasize the relatively stable characteristics of ego-involvement with an attitude object. Sherif, Kelly, Rogers, Sarup, and Tittler (1973) mentioned that, "self is conceived as a system of attitude structures which when aroused by ongoing events, are revealed in more characteristic and less situation-specific behaviors toward objects or classes of objects" (p. 312). Havitz and

Howard (1995) also pointed out that most aspects of enduring involvement can be explained by stability toward the relevant object or event.

While enduring involvement focuses on the tendency to sustain the association between the individual and the relevant object, situation involvement refers to temporary feelings of involvement that follow a particular situation (Houston & Rothschild, 1978). Situational involvement is believed to be initiated by a specific stimulus or situation. Celsi and Olsen (1988) noted that "Situational context is important in determining the extent and type of personal relevance experienced" (p. 211). For this reason, they emphasized that certain times or situations should be properly analyzed to understand the personal relevance for an object or event. Some researchers (Hull, Michael, Walker, & Roggenbuck, 1996) have found evidence that situational issues play an important role in shaping the degree of personal relevance people have with leisure experiences. Although a great deal of research in leisure studies has concentrated on enduring involvement rather than situational involvement, there has been an effort to understand the relationship between the two (Havitz & Mannell, 2005). Havitz and Mannell (2005) found that situational involvement mediated the relationship between enduring involvement and flow experience among both leisure and non-leisure activity participants. With regard to the relationship between enduring and situational involvement, some researchers (Burton & Netemeyer, 1992; Celsi & Olson, 1988) recommended considering both aspects of the involvement construct because it provides unique contributions to experiential outcomes. However, the two involvement constructs

are fundamentally and conceptually intertwined and affect each other in the different contexts of individual experience (Havitz & Mannell, 2005).

2.5.2. Involvement to Leisure Activity

Leisure researchers have borrowed the concept of involvement from the social psychology and marketing fields to explain some aspects of leisure behavior. Havitz and Dimanche (1997) defined involvement in leisure activity as "an unobservable state of motivation, arousal or interest toward a recreational activity or associated product." By stressing the personal relevance of an individual with an attitudinal object, Kyle (2001) conceptualized involvement as "the strength or extent of the psychological linkage between an individual and stimulus object" (p. 14). Along with these conceptualizations, many leisure researchers have studied the association between recreationists, visitors, or tourists and their perception of the relevance of leisure activity. They do this because it provides an understanding of why people are involved in leisure activity and how they regard it. Further, leisure involvement sometimes results in psychological commitment, loyalty, or positive behavioral outcomes. As a result, a considerable amount of research has been published in leisure studies to examine the ways recreationists or leisure consumers relate to a leisure activity or product (Dimanche, Havitz & Howard, 1993; Dimanche & Havitz, 1995) and the effect of leisure involvement on the perceptions of positive outcomes such as commitment, loyalty, or quality (Dimanche & Havitz, 1995; McCarville, Crompton, & Sell, 1993; Park, 1996).

Leisure Involvement is considered a multidimensional construct (Havitz & Dimanche, 1997; McIntyre, 1989). There have been several dimensions of leisure involvement identified including: attraction (the perceived importance or interest in a leisure activity or the perceived feelings of enjoyment or pleasure derived from the activity), centrality (the perceived role of the leisure activity in one's life or social contexts around the leisure activity), sign (the implicit expression of a self by engaging in the leisure activity), and risk consequence (one's perception of the importance of the negative outcomes including physical, social, or psychological risk derived from the leisure choice). McIntyre and Pigram (1992) proposed three dimensions of leisure involvement: attraction (feelings of enjoyment or interest), centrality to lifestyle, and self-expression. They based their work on the earlier conceptualization of involvement suggested by Laurent and Kapferer (1985), which introduced five prominent components of leisure involvement (i.e., interest, pleasure, perceived probability and consequence of risk, perceived pleasure value, and perceived sign value). In recreation research, the three dimensional understanding of leisure involvement proposed by McIntyre and Pigram (1992) has been widely used among researchers (e.g., Ewert & Hollenhorst, 1994; Schuett, 1993). Although researchers have discussed the dimensionality of leisure involvement, their interpretations are complex because they have differing views of the facets of leisure involvement. For instance, one researcher may attribute greater significance to the symbolic meaning associated with particular leisure participation (self-expression) while others may value the participation as just enjoyable and interesting (attraction). Still, another can think of it as very central to their

lifestyle (centrality). By understanding which aspect of leisure involvement is salient for individuals, leisure researchers can comprehend the characteristics or important differences of leisure participants (Gahwiler & Havitz, 1998).

Although many involvement studies have suggested various types of dimensionality, they commonly examine the domain of leisure activity involvement in several ways (Gahwiler & Havitz, 1998; Havitz & Dimanche, 1990, 1999; McIntyre & Pigram, 1992). Some leisure researchers have explored the relationship between leisure activity involvement and an individual's knowledge about activity attributes, such as the amount of knowledge attained with recreation equipment or site information. Others have explored the importance of leisure activity among highly involved recreationists. Mostly, they found that the greater one's activity involvement, the greater the perceptions of activity importance in one's life.

Somewhat differently, other researchers paid attention to the positive behavioral outcomes of leisure involvement. They tried to observe the psychological process of developing commitment or loyalty to a particular recreational setting or service provider and found that it increased for participants continuously involved with the recreation activity. Iwasaki and Havitz (2004) stated that leisure involvement has a meaningful role for ongoing participation and client retention with regard to the loyalty process. Since high involvement represents repeated exposure to the relevant object (e.g., leisure activity), researchers in consumer behavior have concentrated on the effectiveness of gaining high involvement to get higher profit. There has been much evidence for this notion (Barber & Havitz, 2001; Howard, et al., 1992). Barber and Havitz (2001) found

that avid participants, compared to occasional and regular participants, accounted for over half of the overall sports participation rates in the context of Canadian adults' participation in ten sport and fitness activities. Similarly, Howard et al. (1992) also found that 2% of American adults accounted for 75% of the annual participation rates for six leisure activities. However, even though involvement has provided a foundation for initiating loyalty or the commitment process, we should distinguish involvement from loyalty. In this perspective, Iwasaki and Havitz (2004) noted the conceptual difference between the two terms. In their words, leisure involvement refers to one's belief about the importance and interest of his/her leisure participation as well as symbolic values one derives from leisure activity. However, loyalty involves the repeat patronage or committed attitude toward a particular brand or service (Backman & Crompton, 1991; Park, 1996).

To sum up, the study of leisure involvement has provided a wide range of perceptions of recreationists, visitors, and leisure consumers associated with leisure activity. A person's perception of the relevance that a leisure activity has for them represents the degree of personal value it holds within one's life as well as any positive behavioral outcomes that may facilitate psychological commitment or loyalty.

2.5.3. The role of Leisure Activity Involvement in the Stress-coping Relationship

More experienced individuals are considered to have more information about recreation resources (Hammitt, Knauf, & Noe, 1989). The amount of information that people have about the recreational contexts (e.g., the condition of the recreational place,

an alternative place to enjoy an activity, knowledge about what time is good for their activity) could vary according to an individual's perception and reaction to stressful situations. For instance, Iso-Ahola and Park (1996) examined the moderating buffer effect of self-determination disposition (e.g., perceived freedom and intrinsic motivation) and social support (e.g., leisure friendship and companionship) in the relationship between life stress and physical and mental health. In this observation, they controlled the effect of leisure involvement since they thought it affected the relationship between stress and health. They categorized the study participants into three groups: novice, intermediate, and advanced. All statistical results were reported with before and after control for level of leisure involvement. Some of the effects of the independent variable and interaction terms vary based upon whether or not the researchers controlled for leisure involvement. Thus, their study supports the conclusion that leisure involvement has an effect on the perception of and reaction to stressful events.

While there is little research that directly measures the moderating effect of leisure activity involvement in the stress-coping relationship in outdoor recreational contexts, abundant evidence exists in stress and health literature indicating the role of leisure involvement in overcoming stressful life events. Research on negative life events (Kleiber, Brock, Lee, Dattilo, & Caldwell, 1995; Kleiber, Hutchinson, & Williams, 2002) shows that involvement in leisure activities allows people to cope more effectively with their stressful situations in a positive way by experiencing a sense of well-being and social connectedness. Also, positive emotions that individuals experience during leisure

activities have been found to help people cope with stress better (Ong, Bergeman, & Bixconti, 2004).

Janke, Nimrod, and Kleiber (2008) examined the role of leisure involvement in widows' physical and mental health. They observed that widows changed their leisure repertoire (the types of leisure activities they participate in) and the frequency of their leisure involvement after becoming widows. Specifically, the patterns or types of leisure involvement they changed are significantly associated with functional enhancement in terms of physical and mental health. Examples of enhanced health conditions include relief of depressive symptoms, increased life satisfaction, and a greater ability to cope with the loss of their spouse. The health research literature notes that leisure involvement moderates the relationship between stressful life events and the way people try to improve their situation, implying that leisure activity involvement may moderate the way individuals perceive or cope with stressful situations in outdoor recreational settings.

Other recreation studies have examined enduring leisure participation with constructs such as experience use history (EUH) and substitution behavior (Ditton & Sutton, 2004; Hammitt, Backlund, & Bixler, 2004; Havitz & Dimanche, 1997). Havitz and Dimanche (1997) noted that, like consumer behaviors, recreation behaviors can become very habitual in setting use. These habitual characteristics make the users more committed and loyal to settings, which results in less willingness to substitute their recreational places (Havitz & Dimanche, 1997). Hammitt, et al. (2004) mentioned that experienced recreationists are more likely to have a bond with certain sites and are very

habitual in use patterns. This tendency of habitual recreationists provides information about behavioral consequences, which are more predictable than for novices (Hammitt et al., 2004). To increase understanding of experienced users who have more visitation history to a particular recreational setting, researchers have examined the role of experience use history, which measures the amount of past experience by asking about total visits, number of years, and frequency of their past visits to a specific site (Hammitt & McDonald, 1983). Since experienced users have a greater knowledge base concerning recreational sites and activities, they have an affluent cognitive and affective basis for evaluating recreational setting and use (Manning, 1999). Of particular interest here is that high exposure (high involvement) to a recreational setting influences the evaluation and use pattern of the setting. Experienced users typically showed "preferred psychological outcomes" (Driver & Cooksey, 1977) and these preferences influence their behavioral choices (Iso-Ahola, 1980). As one of the behavioral patterns, substitution researchers have found that the amount of one's accumulated leisure experience is negatively associated with their willingness to substitute activities (Ditton & Sutton, 2004). Therefore, more involvement in recreation activity presumably has two results: 1) more willingness to substitute one's recreational setting, or alternately, 2) less willingness to substitute one's recreation activity.

Consequently, since leisure involvement literature has confirmed that the intensity of involvement differentiates the perception of the situation in which that involvement object exists from the behavioral outcomes of involvement, it is highly probable that leisure activity involvement will clarify the relationship between the

perception of stress and the way people cope with a stressful situation. Thus, leisure activity involvement is used as a moderator, which could lead to opposite results with the moderating effect of place attachment.

2.6. Multicultural Perspective on the Stress - Coping Relationship

2.6.1. Multicultural Perspective in Research of Human Behavior

All behaviors have been argued to be shaped by culture (Pedersen, 1991, 1999). It is hard to ignore the importance of culture when we look at human behaviors. Even though most cultures share some common genetically determined behaviors, the manifestations of those behaviors are still influenced by culture (Wong, Wong, & Scott, 2006). Cultural psychologists have emphasized that we should understand the relationship between individual behavior and culture as a continuous interaction (Ho, 1995; Chun, Moos & Cronkite, 2006).

Culture is commonly understood as a way of perceiving the world based on a shared set of social beliefs and values (Wong, et al., 2006). Brislin (1990) defined culture as "widely shared ideals, values, formation and uses of categories, assumptions about life, and goal-directed activities that become unconsciously or subconsciously accepted as right and correct by people who identify themselves as members of a society" (p. 11). All kinds of expression of human nature exist in the boundary of culture. We can observe the way people express their thoughts and emotions in a culture—from fears, cravings, and cruelty to pleasures, aspirations, and generosity. Berry (1990) emphasized the importance of culture especially in observing human

behaviors. He stated, “Human behavior is meaningful only when viewed in the sociocultural context in which it occurs.” However, a large amount of social psychological research has ignored the meaning of culture even though it is a source of human behavior (Berry, 1990).

Multiculturalism is a social movement that embraces diversity, inclusiveness, and equality while recognizing the legitimacy and value of ethnic differences and cultural heritage (Leong & Wong, 2003). Many cultural and cross-cultural psychologists draw upon this perspective to understand human behaviors across cultures. Segall, Lonner, and Berry (1998) noted that it is hard to use a universal standard for all research in human behavior. Thus, the multicultural perspective has been employed by many cultural psychologists to bring accuracy and give richness of cross-cultural research to human behavior (Wong, et al., 2006).

2.6.2. Individualistic and Collectivistic Self-construal

A number of scholars have examined the concept of collectivism and individualism with regard to human behavior that is shaped by cultural context (Hofstede, 1980; Markus & Kitayama, 1991; Singelis, 1994). Individualism and collectivism involve a set of values, attitudes, and behaviors that vary depending on the emphasis an individual place on self versus the in-group (Hofstede, 1980). In individualism, the self is the central unit of society. It emphasizes individual rights, personal autonomy, and self-fulfillment. However, collectivistic cultures emphasize the in-group as the most important unit of society. Thus, a collectivistic culture emphasizes

the responsibility of group-related behaviors, interdependence, and the fulfillment of social roles. This concept of cultural orientation has been used in cultural research mostly to describe differences observed between cultural groups (e.g., Bond & Venus, 1991; Leung & Bond, 1984). Previous studies have characterized North America as individualist, and have characterized the cultures of Asia as collectivist.

An extensive array of studies on these two types of cultural orientations and systems of self-construal have been reviewed by Markus and Kitayama (1991) who focused on the importance and power of these constructs for cognition, emotion, and motivation in North American and East Asian cultures. They proposed the concept of culturally different types of self-construal in cultural psychology. According to their assumption, people in the West hold an independent view of the self that emphasizes the separateness, internal attributes, and uniqueness of individuals (the independent self-construal) and that many East Asian peoples hold an interdependent image of self, connectedness with others, social context, and relationships (the interdependent self-construal). Their conceptualization of these two different types of self-construal is based on the social identity theory introduced by Tajfel and Turner (1979). Social identity theory proposes that individuals develop their social identity as in-group identification defined as "the part of an individual's self-concept which derives from his knowledge of his membership in a social group… together with the values and emotional significance attached to that membership" (Tajfel, 1981, p. 255). Thus, depending on the perception or definition of one's self, self-construal has two distinctive dimensions: independent and interdependent. The latter is considered a characteristic of Eastern people and the

former is for Western's perception of their culture. The concept of self has been found to be central to an individual's perceptions, evaluations, and behaviors (Markus & Kitayama, 1991) and culturally different types of self have significant impacts on an individual's emotions, cognition, motivation, and behaviors (Walker, Deng, & Dieser, 2005). This theoretical framework has been applied to many cultural studies to compare individual identity and collective identity.

In leisure research, the importance of the cross-cultural perspective in leisure behavior has recently been raised by several authors (Chick, 1998; Walker, Deng, & Dieser, 2005). According to Walker, Deng and Dieser (2005), leisure groups of different cultural backgrounds should be studied using different theoretical frameworks. They noted that this is important for several reasons. First, while cultures may emphasize one perspective more than another, every culture recognizes and legitimates some aspects of both independence and interdependence and, correspondingly, at the personal level, "there are elements of both independence and interdependence in every self" (Fiske, Kitayama, & Markus, 1998, p. 925). Second, "interdependent selves do not attend to the needs, desires, and goals of all others. Attention to others is not indiscriminate; it is highly selective and will be most characteristic of relationships with 'in-group' members" (Markus & Kitayama, 1991, p. 299). The studies of self-construal across different cultures suggest the importance of considering the cognitive and emotional domains of human behavior. For instance, with regard to the cognitive domain, individuals with interdependent selves would be more sensitive to social others than those with independent selves (Markus & Kitayama, 1991). They may define themselves

in relation to others. For the emotional domain, most of leisure research in Western countries emphasizes the pleasure or excitement of emotional experience in recreational behavior. Markus and Kitayama insisted another emotional aspect may exist because of cultural differences. That is, people who have interdependent selves may experience a different kind of emotion, one that comes from interpersonal relationships (Markus & Kitayama, 1991). Based on previous works on social identity theory, including that of Markus and Kitayama (1991), it is believed that a comparison of two groups that are distinctly different from each other would enrich the theoretical framework used to explain different groups in terms of culture.

2.6.3. Cultural Orientation in Stress and Coping Research

Stress has often been studied using the transactional approach suggested by Lazarus and his colleagues. However, most stress research has ignored the contextual importance for both cultural and situational contexts (Moos & Swindle, 1990). Clearly, recent stress and coping research (Lazarus, 2006; Folkman & Moskowitz, 2004; Snyder, 1994; Somerfield & McCrae, 2000) lacks understanding of cultural contexts. The lack of cultural understanding of stress and coping processes is mainly due to theoretical and methodological limitations (Somerfield & McCrae, 2000). It is necessary to have well developed constructs, instruments, and paradigms that can compensate for the cultural gaps to facilitate cross-cultural research. At least, determining the extent to which Euro-American theories and findings apply to other cultural contexts would narrow the gap

between theory and application and provide a multicultural perspective in stress/coping research (Wong, et al., 2006).

Lazarus (2000) emphasized the relational meaning in the stress process. In the same perspective, some coping researchers have concentrated on relation-focused coping behavior (Lyons, Mickelson, Sullivan, & Coyne, 1998; O'Brien & DeLongis, 1996). Through relation-focused coping behavior, researchers try to analyze the characteristics of human coping behavior, especially focusing on the importance of relation to others in a society or culture. Within the same perspective, Markus and Kitayama (1991) stated that collectivistic coping behavior exists in cases of interdependent self-construal rather than cases of independent self-construal.

Many cultural psychologists have explored the collectivistic coping behaviors in East Asian cultures. Chun et al. (2006) differentiated the terms "collective coping strategies" and "collectivistic coping style." The former is the collective effort to mobilize group resources to deal with a difficult situation, and the latter refers to the normative coping style of collectivistic individuals. Yeh, Inman, Kim, and Okubo (2006) have developed a collectivistic coping scale (CCS) based on East Asian collectivistic values. They found seven dimensions of relation-focused coping process as collective coping strategies: respect for authority (the tendency to cope by relying on community elders), forbearance (one's preference for enduring the problem quietly), social activity (utilizing social networks), intracultural coping (getting support from networks with racially similar individuals), relational universality (social support from people who share the same experiences), fatalism (accepting a problematic situation as it is), and

family support (getting support from family members). This scale explains how East Asians prefer to cope with the problems in their lives using their social resources such as family or networks. Zhang and Long (2006) also developed a collective coping scale based on the support seeking process. They noted that most people who have a collective identity consider the problem of an individual who belongs to the same community or group as business of their own, not just involving the one who suffers the problem. Wong (2006) suggested that one important point is to differentiate the meaning of social support and collective coping. He noted that collective coping is more than getting social support because it involves the concerted effort of the entire group to overcome a member's problem. Group members take it for granted that the problem is their own and work together to find a solution because they belong to the same community or group. This is different from an individual who uses his or her own social resources (such as personal relationships) to get group support (Wong, 2006). Some researchers have noticed that Asian Americans are less likely to seek social support from the outside of their group (e.g., professionals, colleagues, or strangers) than Americans of European descent (Taylor et al., 2004; Yeh et al., 2006). Instead, their social support comes from members who belong to the same group.

Recent studies on ethnic differences in self-description have found that Euro-American college students describe themselves with more personal traits and fewer social role descriptions than Asian Americans or Korean college students (Rhee, Uleman, Lee & Roman, 1995). Others also found similar results that support the perception that Euro-Americans have a more independent self-construal. Euro-

American adolescents rated individualistic self-description as more important than collectivistic self-descriptions. They also chose fewer group-focused self-descriptions when compared to other racial groups (Dabul, Bernal, & Knight, 1995). Gaertner, Sedikides, and Graetz (1999) described how Euro-American college students' cultural orientation affects their social identity. Students who scored low in collectivism tended to find themselves with fewer social identity items than those who scored high in collectivism. Thus, it could be assumed that individuals with interdependent self-construal are more sensitive to their social context. This idea suggests that they may be more field-dependent, have more external locus of control, and are more likely to be influenced by environmental demands (Markus & Kitayama, 1991; Wong, et al., 2006).

Thus, it could be argued that the perception of stress and its reaction can vary depending upon individuals' self-orientation, which determines the important factors that shape a situation. The behaviors of an individual who is easily influenced by external factors (e.g., social pressure or others' inhibiting behavior) will be different from those behaviors of an individual who is not susceptible to external forces. Therefore, in this study, one of the major elements that differentiate the degree of stress and the coping method is assumed to be the orientation of self (independent or interdependent self-construal) in that it affects one's perception of the situation.

3. METHODS

3.1. Study Settings

Two study sites were chosen from which to collect data: 1) Lake Granbury in Texas (see Figure 2) and 2) Lake Chung-pyung in Gapyeong-gun, South Korea (see Figure 3). The North American study site, Lake Granbury, is a reservoir situated near the City of Granbury in central Texas. Created in 1969 as a result of the damming of the Brazos River, the lake is located about 33 miles from Dallas/Fort Worth. Long and narrow, the lake has 103 miles (166 km) of shoreline, a surface area of 8,310 acres, and a maximum depth of 75 feet. Lake Granbury supports a range of water-based recreation activities, such as boating, waterskiing, and fishing.

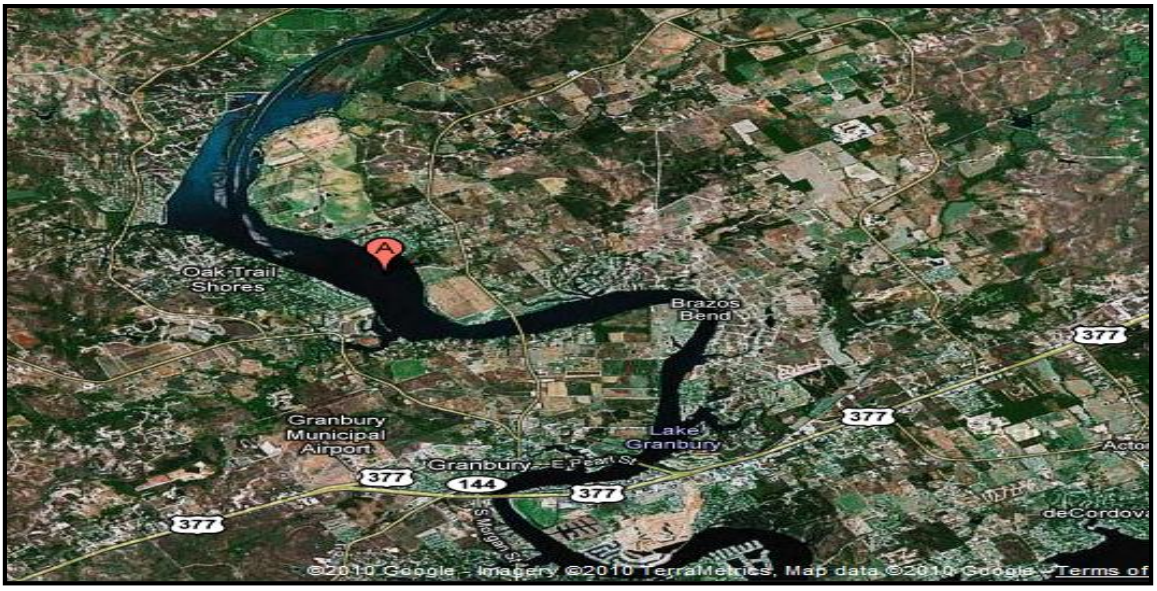


FIGURE 2 Lake Granbury, Texas, U.S.

The Korean study site, Lake Chung-pyung in Gapyeong-gun, is a popular day use recreational area situated in Gyeonggi-do province 40 miles east of Seoul, South Korea. The lake also supports a variety of water-based activities, which include boating, fishing, waterskiing, and wakeboarding. Constructed in 1943, Lake Chung-pyung has a normal surface area of 3,212 acres that can reach as much as 4,695 acres when filled to capacity.

FIGURE 3 Lake Chung-pyung, Gapyeong-gun, Gyeonggi-do, South Korea.

These two lakes, Lake Granbury and Lake Chung-pyung, were selected due to their close proximity to large cities (Dallas/Fort Worth and Seoul) and the similarity of recreational activities accommodated (boating, fishing, and waterskiing). Further, I decided to study water-based recreation activity (e.g., boating, fishing, waterskiing,

wakeboarding, etc.) because of its popularity in both countries. In the U.S., recreational boating is a popular activity nationally and in central Texas. Recently, a number of issues have emerged relating to crowding, boater behavior, and lake management (e.g., regulation). Past work has shown these issues to be problematic for users and, consequently, potential stressors (Manning & Valliere, 2001; Miller & McCool, 2003; Stankey & McCool, 1984). Also, water-based recreation activities, including boating, fishing, and waterskiing, are also popular in South Korea. Because of the increasing boating population in many inland waters (e.g., lakes and reservoirs), the Korean government enacted a recreational boating safety law in 2000 to ensure the safety of recreational boating.

3.2. Data Collection

With regards to data collection in the U.S., those residing within 500 feet of Lake Granbury were considered as a potential pool of respondents. The postal addresses of residents were extracted from the 2010 Real Estate Property Data. To identify tax assessors' property parcels that have single/multiple family dwellings adjacent to the lake, Arc/Info Geographic Information Systems (GIS) software was used. Utilizing GIS, property owner names and addresses were identified from the state property tax board code of the Central Appraisal District. From the list of households, I randomly selected 2,000 names and addresses. On October 12th, 2010, I distributed invitation postcards to the selected households (1,042 property owners and 1,077 residents near Lake Granbury) inviting them to respond to an online survey (Qualtrics.com), which they could access

using an access code. Reminder/thank you postcards were sent on November 1st, 2010. One of the advantages of an online survey is that the presentation of questions can be controlled so that respondents cannot inadvertently or deliberately skip questions. The presentation of scale items was also randomized so that the order of the items presented to respondents varied from respondent to respondent. Also, this method minimizes the costs associated with paper, postage, and data entry (Dillman, 2000). Data were collected over the fall of 2010 from property owners and residents near Lake Granbury. The response rate was 11.25% (225 out of 2,000 households completed surveys). To identify the recreational boaters among the respondents, I asked whether they boated on Lake Granbury. If they were not boaters, they were asked to skip to the last section of the questionnaire, "Household Information." There were 39 respondents who did not identify themselves as boaters. After removing their responses, only 186 questionnaires were used in the analyses.

For the data collected in Korea, I distributed on-site surveys to recreationists on Lake Chung-pyung, Gyeonggi-do, during July and August, 2010. I chose to distribute the survey instrument on-site because there were no available public records of shoreline property owners or other users of the lake. In South Korea, recreationists pay fees to dock owners or service providers for an array of recreational services, including the rental of speedboats, water-skis, wakeboards, canoes, and PWCs. Recreationists can rent and drive watercraft if they are certified or they may pay service providers to have someone drive a boat for them (e.g., if a person is alone and wants to enjoy waterskiing). Throughout July through August 2010, surveyors visited the lake area in Chung-pyung

to collect data from recreationists along the lake. Every 5th visitor to boat ramps along Lake Chung-Pyung was asked to complete the on-site survey. Finally, I collected 462 completed surveys from the site with the response rate of 57.0%.

The same questionnaire used in the U.S. was translated into Korean. To obtain an equivalently worded instrument for each country, forward and back translation of the instrument was performed (De Groot, Dannenburg, & Van Hell, 1994). For the forward translation, a Korean-born bilingual individual, who was familiar with recreation terminology, first translated the English version of the questionnaire into Korean emphasizing the conceptual meaning of the context rather than a literal translation. After this, a bilingual researcher examined the questionnaire to identify and resolve any inadequate expressions/concepts in the Korean version of the questionnaire. The researcher had obtained a Ph.D. Degree in the field of recreational studies and had experience with survey instruments. This process resulted in a completely translated Korean version of the questionnaire. In the back-translation process, the instrument was translated back into English by another translator, whose mother tongue is English and who had no prior knowledge of the questionnaire. This process was limited to selected items (e.g., items selected by myself and the panel that were key to the instrument, my dissertation or suspected to be ambiguous). As with the forward translation, the focus in the back translation was on conceptual rather than absolute linguistic equivalence. Potential discrepancies were then discussed and resolved collaboratively with the researcher and the panel members.

3.3. Measures

3.3.1. Types and Intensity of Stress

This study measured the intensity of stress people feel as a result of their perceptions of specific conditions in water-based recreation areas. Previous stress research published in the leisure literature has used the "hassles scale" (Peden & Schuster, 2008; Schuster, 2000) to measure the intensity of stress experienced by recreationists in natural settings. However, owing to contextual differences and the potential stressors that confront recreationists in different recreation environments (e.g., aquatic vs. back-country), it was determined that it was inappropriate to adopt precisely the same indicators to measure stress owing to the varied conditions faced within such diverse contexts (e.g., wilderness, boating, hiking).

Consequently, using the same response scale as Schuster and colleagues, I developed nine indicators of recreational stress. Another 16 items were adapted from Tseng (2009), which measured boaters' perception of problems on three Texas lakes. These items refer to the condition of the water, safety issues in the lake area, noise, conflict, other boaters' behavior, and the condition of facilities. These items were chosen to measure stress levels among recreational boaters because previous stress literature indicated these as stressors in recreation areas (Manning & Valliere, 2001; Miller & McCool, 2003; Schneider & Hammitt, 1995; Stankey & McCool, 1984). Thus, a total of 25 items identified the type and intensity of stress experienced among recreationists in the two lake contexts (see Table 1). I also provided the option for respondents to describe their own stressful encounters. Items were measured along a scale of zero to

four with zero being "not at all stressful," four being "very stressful," and five being "unable to comment."

TABLE 1 Stressors at Lake

Measuring stress: To what extend did you find each of the following to be stressful at Lake Granbury (or Chung-pyung) (from 1=not at all stressful, to 4=very stressful, 5=not applicable)
Behavior of other visitors
Law enforcement
The number of other visitors/recreationists encountered
Interaction with lake management personnel
Other members of my group
Concerns about accidents
Insects
Weather
The provision of fresh water
Litter on beaches and shoreline
Water quality
Operation of personal watercraft (e.g., jetskis)
Navigational aids on the lake
Disposal of human waste
Playing amplified music on the lake
Boat engine noise
People being inconsiderate
Conflicts with other boaters for shoreline space
Conflicts with docks over shoreline space
Debris at launch ramps
Toilet facilities on the lake
Erosion of shoreline
Unsafe operation of watercraft by other boaters
Aquatic vegetation
Water surface too rough
Other negative setting elements (please specify)

The same questionnaire was used to identify the type and level of stress among recreationists on Lake Chung-pyung, South Korea. I conducted in-depth interviews with three South Korean key informants who were recreational boaters on Lake Chung-pyung to determine whether the setting elements I identified as potential stressors were appropriate. The issues identified by these three key informants (e.g., conflict issues, other boaters' behavior, unsafe operation of other boats, etc.) were similar to those specified in the scale on the U.S. questionnaire.

3.3.2. Cognitive Appraisal

As discussed earlier, there are two stages of cognitive appraisal. In primary appraisal, people think about a stressful situation and determine whether it affects them or not. Once they perceive a stressful situation as being personally relevant (primary appraisal), they reflect on their available resources and consider appropriate coping strategies (secondary appraisal). Thus, previous literature has recognized secondary appraisal as the most important evaluative process that enables people to choose appropriate coping strategies (Schuster et al., 2003, 2006).

For secondary appraisal measures, I adapted four indicators from the work of Lazarus and Folkman (1984). They suggested that people proceed to secondary appraisals if they recognize a situation to be stressful. In the appraisal of conditions encountered within the recreation setting, recreationists consider whether or not they have adequate resources to cope with the situation extant in the setting. Thus, I used four items to examine whether recreationists believe they can overcome the stressful situation

(see Table 2). Using a scale of one to five (1=strongly disagree, 5=strongly agree), respondents specified their level agreement with each of the items.

TABLE 2 Cognitive Appraisal

Please indicate your level of agreement with the following questions concerning the condition you encountered on your last visit to the lake. (1=strongly disagree ~ 5=strongly agree)
I had to accept the situation as it was.
I could change the situation or do something about it.
I needed to know more about the situation before I could act.
I had to hold myself back from doing something about the situation.

3.3.3. Coping Strategies

I measured coping strategies relating to the conditions encountered by respondents on the lakes by using a checklist adapted from Miller and McCool (2003). This coping checklist examines a wide range of cognitive and behavioral coping strategies that recreationists use to manage the internal and external demands of a stressful encounter. I used a total of 20 items to measure the various kinds of coping strategies recreationists employ under various stressful situations (see Table 3). As suggested by Miller and McCool, these items measured seven dimensions of coping behavior: absolute displacement, temporal substitution, activity substitution, resource substitution, rationalization, product shift, and direct action. The items are measured using a five-point Likert-type scale from (1) “does not describe” to (5) “describes very well”.

TABLE 3 Coping Checklist

Please indicate your level of agreement with the following statements. (1=Does Not Describe ~ 5= Describes Very Well)
Absolute displacement
a. Decided to never visit this lake area again because of this condition/situation
j. Decided to never boat again because of this condition/situation
f. Decided to leave this lake area now because of the condition/situation
Direct action
d. Talked with other members of your group about the condition/situation
g. Decided to talk with lake personnel about the condition/situation
i. Decided to talk to someone who could do something about the condition/situation
Temporal substitution
e. Decided that, if you visit in this area in the future, visiting at a different season would help avoid this condition/situation
o. Decided that, if you visit this area in the future, visiting at a different time of day would help avoid this condition/situation
l. Realized that you could avoid the condition/situation in the future by visiting this area at a different time
Activity substitution
m. Planned to do other things besides boating to avoid this condition or situation
b. Realized that doing some activity other than boating would allow you to avoid this condition/situation
r. Decided that boating is no longer important to you because of this condition/situation
Resource substitution
p. Decided that you would come back to the lake at the same time, but would visit a different area of the lake to avoid this condition/situation
s. Realized that visiting different areas of the lake would allow you to avoid this condition/situation
Rationalization
n. Saw the condition/situation as a positive chance to grow personally
h. Told yourself that there was nothing you could do about it, so you just enjoyed the experience for what it was
k. Told yourself the condition or situation was actually a symptom of some larger problem
Product shift
t. Realized that the condition/situation you experienced was really suitable after all
c. Told yourself it was unreasonable to expect that things should have been different in this area
q. Decided that, for this area, the condition/situation was what it should be

3.3.4. Place Attachment

Previous place literature indicates that attachment differentiates an individual's perception of setting conditions. This may result in a different selection of coping strategies as well. Thus, I tested the moderating effect of place attachment on the stress – appraisal – coping relationship by measuring place attachment among recreational boaters on Lake Granbury and Lake Chung-pyung. Place attachment was measured using a scale adapted from Kyle et al. (2004) consisting of 17 items. The scale measured four dimensions of setting attachment: place identity, place dependence, affective attachment, and social bonding. A five-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree) was used to measure respondents' level of attachment to each of the lakes (see Table 4).

TABLE 4 Place Attachment

	(1=Strongly Disagree ~ 5= Strongly Agree)
Place Identity	
*I feel that Lake Granbury is a part of me.	
*I identify with Lake Granbury.	
*Lake Granbury means a lot to me.	
*Visiting Lake Granbury says a lot about who I am.	
Place dependence	
* Lake Granbury is the best place for the recreational activities that I enjoy.	
*I feel that a lot of other lakes could substitute for Lake Granbury.	
*Compared to Lake Granbury, there are few satisfactory alternatives.	
*I can't imagine a better place for what I like to do.	

Table 4 continued

Affective Attachment
*I have a strong emotional bond to Lake Granbury.
*I feel a strong sense of belonging to Lake Granbury.
*I really enjoy Lake Granbury.
*I'm happiest when I get to visit Lake Granbury.
*Visiting Lake Granbury allows me to release built-up tension.
Social Bonding
*I have a lot of fond memories of past experiences with family/friends at Lake Granbury.
*The time spent on Lake Granbury allows me to bond with my family/friends.
*I associate special people in my life with Lake Granbury.
*Visiting Lake Granbury allows me to spend time with my family/friends.

3.3.5. Leisure Activity Involvement

I measured leisure activity involvement in this study to see how the degree of involvement with a specific recreation activity affects the relationship among stress level, cognitive appraisal, and coping strategies. Leisure activity involvement was measured using a modified involvement scale adapted from Kyle, Absher, Norman, Hammitt, and Jodice (2007). It contains a total of 25 items in five dimensions: attraction, centrality, social bonding, identity affirmation, and identity expression (see Table 5). I used a five-point Likert-type scale to assess respondents' involvement with boating, with 1 being "strongly disagree" and 5 representing "strongly agree."

TABLE 5 Leisure Activity Involvement

1. What is your most preferred water-based recreation activity in this lake (e.g., boating, wakeboarding, water skiing, fishing, etc.)? Please write down your most preferred activity. My most preferred activity: _____
2. Please think about the above activity and indicate how you feel about your recreational activity for each of the statements below (1=Strongly Disagree ~ 5= Strongly Agree).
Attraction
*I have little or no interest in [the activity].
*[The activity] is one of the most enjoyable things I do.
*[The activity] is one of the most satisfying things I do.
*[The activity] is important to me.
*I find [the activity] engrossing.
Centrality
*I find a lot of my life is organized around [the activity].
*[The activity] occupies a central role in my life.
*To change my preference for [the activity] to another activity would require major rethinking.
*I invest most of my energy and resources in [the activity].
*I try to structure my daily (or weekly/monthly) routine around [the activity].
Social Bonding
*I enjoy discussing [the activity] with my friends.
*Most of my friends are in some way connected with [the activity].
*Participating in [the activity] provides me with opportunity to be with friends.
*Special people in my life are associated with [the activity].
*I prefer to be around others who share my interest in [the activity].
Identity affirmation
*When I participate in [the activity], I can really be myself.
*I identify with the images associated with [the activity].
*When I'm doing [the activity], I don't have to be concerned with the way I look and behave.
*My true self emerges when I participate in [the activity].
*[The activity] has enhanced my self-image.
Identity Expression
*You can tell a lot about a person by seeing them enjoying their recreation.
*To a large extent, [the activity] provides one of the few outlets where I can be myself.
*Participating in [the activity] says a lot about who I am.
*Participating in [the activity] allows me to express myself.
*When I participate in [the activity], others see me the way I want them to see me.

3.3.6. Self-construal

Since the literature indicates that different types of self-construal result in different perceptions of stress and patterns of coping, I measured the types of self-construal among North Americans and South Koreans to compare the two different cultural groups. I measured respondents' self-construal using a scale developed by Gudykunst and Nashida (1994). While the original scale contained a total of thirty items measuring two dimensions (i.e., interdependent and independent self-construal), based on the work of Gudykunst and Lee (2003), I limited our adaption to twelve items. Gudykunst and Lee found that shorter versions of the scale have been consistently reliable. The scale used in this study, consisting of 12 items, measured the extent to which people indicate which type of self-construal most represented themselves (see Table 6).

TABLE 6 Self-construal

Please indicate your level of agreement regarding following questions. (1=Strongly Disagree ~ 5= Strongly Agree)
Independent self-construal
*My personal identity is important to me.
*I prefer to be self-reliant rather than depend on others.
*I take responsibility for my own actions.
*It is important for me to act as an independent person.
*I should decide my future on my own.
*I enjoy being unique and different from others.
Interdependent self-construal
*I will sacrifice my self-interest for the benefit of my group.
*I stick with my group even through difficulties.
*I respect decisions made by my group.
*I maintain harmony in the groups of which I am a member.
*I respect the majority's wishes in groups of which I am a member.
*It is important to consult close friends and get their ideas before making a decision.

3.4. Data Analysis Procedures

The collected data was treated for missing values in order to perform further analysis. To avoid a potential bias caused by eliminating missing cases, multiple imputation was conducted using a Listwise selection. It is important to deal with missing cases because it sometimes results in a biased sample (Wayman, 2003). Simply deleting incomplete cases is not always desirable because it affects parameter estimates and standard errors (Schafer, 1997). Thus, Penn (2005) recommended multiple imputation as a desriable method of dealing with missing information. Listwise selection of cases eliminated all cases for which there were missing values. Multiple imputation, a method of replacing missing values, is available from PRELIS, a component of the LISREL program. After the imputation, I conducted a confirmatory factor analysis (CFA) using

LISREL to validate the hypothesized factor structure of the construct dimensions (e.g., coping dimensions). After examining the measurement component of the hypothesized model, the hypothesized relationships among the constructs (i.e., stress, appraisal, and coping) were examined using a covariance structure analysis with LISREL (version 8.70).

3.5. Reliability and Validity of Measures

I conducted two reliability tests on each of the items related to the latent dimensions; Cronbach's coefficient alpha and composite reliability. The most widely used measure of reliability is Cronbach's alpha (α), which examines the internal consistency of the items. A criterion of .70 is recommended (Nunnally, 1967) and .60 is acceptable (Cortina, 1993). Another reliability test, composite reliability considers the actual factor loading (Bagozzi & Kimmel, 1995; Perugini & Bagozzi, 2001). A criterion of .60 was suggested by Bagozzi and Yi (1988).

The convergent validity, which reflects the degree to which a measure is similar to other operations that it theoretically should be similar to, was assessed by confirming the significant factor loadings for each construct. Brown (2006) mentioned that the results of the CFA can support the convergent and discriminant validity of theoretical dimensions. The convergent validity will be supported when different indicators of theoretically similar variables are highly interrelated. On the other hand, discriminant validity is intended to check whether different variables have weak correlations with

each other. This validity will be supported when indicators of different constructs are not strongly intercorrelated (Brown, 2006).

3.6. Assessment of Model Fit

The quality of the hypothesized model was judged using the goodness-of-fit indices. The indices used were the root mean square error of approximation (RMSEA), comparative fit index (CFI), and non-normed fit index (NNFI). The generally accepted values for each of these indices are; (a) RMSEA values under .10 (MacCallum, Browne, & Sugawara, 1996), (b) CFI values greater than .95 (Hu & Bentler, 1998), and (3) NNFI values greater than .90 (Hu & Bentler, 1998). Since chi-square statistic is sensitive to sample sizes greater than 100 (Byrne, 1998), this was not considered as an indicator of the model fit.

4. RESULTS

4.1. Analysis for Pooled Sample: Korean and American Respondents

In this study, I collected data from two countries: Korean recreationists at Lake Chung-pyung and American recreationists at Lake Granbury, Texas. Thus, the pooled sample was the combination of these two data sets.

For the hypothesized relationship among stress, appraisal, and coping, I first conducted a confirmatory factor analysis (CFA) in LISREL version 8.70 to examine the suitability of the hypothesized factor structure. As shown in Table 7, the fit indices (χ^2=1059.07, df=150, RMSEA=.18, NNFI=.80, CFI=.82) for this model indicated a poor fit for the data. Since the test of the structural component of the hypothesized model should be based on the adequacy of the measurement model, I did not proceed to test the structural model.

Two of the variables in the hypothesized model, stress and appraisal, were manifest variables which were sums of all items scores. Item parceling for two variables (stress and appraisal) was conducted. A parcel is an observed variable, which is a summation of conceptually similar or psychometrically unidimensional items. For example, stress level was the sum of all 25 items measuring stress and appraisal was the sum score of 4 items.

TABLE 7 Model Testing Procedures for Pooled Samples

Model	χ^2	df	RMSEA	NNFI	CFI
Measurement Model	1059.07	150	.18	.80	.82

I tried several methods to improve the poor model fit for the pooled sample. However, removing the non-significant paths from the hypothesized model to analyze data or following modification indices did not significantly improve the model fit. This could have resulted from combining two culturally different samples: Korean and American. Therefore, I decided to independently analyze the hypothesized model (see Figure 1) for Korean respondents first, and then move on to the test for American respondents.

4.2. Korean Respondents

4.2.1. Socio-Demographic Profile of Korean Recreational Boaters at Lake Chung-pyung

TABLE 8 Socio-demographic Characteristics of Korean Respondents

Demographic characteristics	n (%)
Gender	
Male	249 (55.5%)
Female	200 (44.5%)
Education	
Elementary school graduate	6 (1.3%)
Middle school graduate	15 (3.3%)
High school graduate	128 (28.4%)
College graduate	250 (55.6%)
Master, doctoral, or professional degree	51 (11.3%)
Employment	
Employed, full time	173 (38.6%)
Employed, part time	19 (4.2%)
Retired, but working part time	2 (.4%)
Retired, not working	3 (.7%)
Homemaker	20 (4.5%)
Self-employed	109 (24.3%)
Unemployed	30 (6.7%)
Student	69 (15.4%)
Other (specify)	23 (5.1%)
Income (annual)	
Less than 24,000,000 won[a]	153 (36.0%)
Between 24,000,000-35,999,999 won	98 (23.1%)
Between 36,000,000-47,999,999 won	60 (14.1%)
Between48,000,000-59,999,999 won	34 (8.0%)
Between60,000,000-119,999,999 won	46 (10.8%)
More than 120,000,000 won	34 (8.0%)

$1USD=1,092.79 won (Aug, 2011)

Table 8 presents the socio-demographic information for Korean respondents (n=462). The gender breakdown was male (55.5%) and female (44.5%). Almost half of the respondents (55.6%) graduated from college. Of the respondents 38.6% were employed full-time and 24.3% were self-employed. The average income per month fell in the range of 2,000,000 won to 3,999,999 won (translated into U.S. dollars in the currency of July 15, 2011, the average monthly income was between $1,889 and $3,775).

According to the 2009 statistical report announced by the Ministry of Culture, Sports and Tourism in Korea (Ministry of Culture, Sports, and Tourism, 2009), there were 3,717,175 annual users of water-based recreation facilities (commercial). Participants in water-based recreation increased from 1.6% in 2006 to 3.3% in 2008. Among the water-based recreationists, 31.3% were males and 68.7% were females. The participant ratio by age was distributed among teens (13.1%), 20s (8.4%), 30s (24.1%), 40s (13.9%), 50s (15.5%), 60s (17.1%), and over 70 (17.9%) (see Table 9). In addition to the demographic information, water-based recreation business occupies about 0.4% of the overall recreational sports industry in Korea. While recreational boaters at Lake Chung-pyung showed a fairly even gender ratio (55.5% male and 44.5 female), there was a slightly larger group of females (68.7%) in the overall participants in water-based recreation in Korea.

TABLE 9 Demographic information for water-based recreationists in Korea

Total number of participants in water-based recreation in Korea	3,717,175
	%
Gender	
Male	31.3%
Female	68.7%
Age	
Up to Teens	13.1%
20s	8.4%
30s	24.1%
40s	13.9%
50s	15.5%
60s	17.1%
Over 70	17.9%

(Ministry of Culture, Sports, and Tourism, 2009)

4.2.2. Measurement Model

Using the pooled sample (Korean recreationists at Lake Chung-pyung, n=462), I conducted a CFA using LISREL to identify the hypothesized factor structure of coping (i.e., measurement model). Five coping items (i.e., coping e, j, n, r, and t in Table3.) were removed because of low factor loadings (≤.50) and cross-loading across dimensions. The final CFA model confirmed the theoretical structure of seven dimensions of coping: 1) absolute displacement, 2) temporal substitution, 3) activity substitution, 4) resource substitution, 5) rationalization, 6) product shift, and 7) direct action. The model showed a satisfactory fit for the data (χ^2=314.36, df=69, RMSEA=.08 NNFI=.91, CFI=.94).

As shown in Table 10, the Cronbach's alpha coefficients ranged from .60 to .73 (.70 for absolute displacement, .69 for temporal substitution, .68 for activity substitution, .64 for resource substitution, .69 for rationalization, .60 for product shift, and .73 for direct action, respectively). An acceptable Cronbach's alpha coefficients have been argued to be .70 (Nunnally & Bernstein, 1994). However, five constructs showed coefficients below .70. Temporal substitution and activity substitution were close to .70 (.69 and .68 respectively). Resource substitution, rationalization, and product shift were between .60 and .69. However, given the small number of indicators (less than 3), these constructs are considered sufficiently reliable (Cortina, 1993). Cortina (1993) stressed that it is important to consider the context (e.g., number of indicators) when deciding the reliability of a construct because alpha is a function of the number of items in a scale. Thus, we cannot simply apply the criteria of .70 to a construct with a small number of indicators (the study gave an example of less than three items). The reliability issue should be considered by a researcher in terms of number of items, previous literature, and so on (Cortina, 1993). The previous coping study already confirmed the reliability of these constructs (Miller & McCool, 2003; Tseng, 2009).

In addition, composite reliability was checked for all dimensions of coping. A composite reliability coefficient over .60 has been considered as reliable (Bagozzi& Kimmel, 1995; Bagozzi & Yi, 1988). It is calculated in this way: composite reliability= (sum λ)2/ [(sum λ)2 + (sum ε)] (λ: factor loading, ε: error variance associated with individual items). As presented in Table 9, all of the composite reliabilities were over .60 (.77 for absolute displacement, .80 for temporal substitution, .75 for activity

substitution, .73 for resource substitution, .73 for rationalization, .63 for product shift, .74 for direct action).As shown in Table 9, all factor loadings had significant t-values ranging from 6.23 to 18.48, which provide evidence of convergent validity.

TABLE 10 Confirmatory Factor Analysis: Coping

	M	SD	Factor Loadings	*t*-value	α	Composite Reliability
Absolute Displacement					.70	.77
(a) Decided to never visit this lake area again because of the condition/situation	1.70	.91	.70	15.96		
(f) Decided to leave this lake area now because of the condition/situation	1.76	1.04	.79	18.48		
Temporal Substitution					. 69	.80
(l) Decided that, if you visit this area in the future, visiting at a different time of day would help avoid the condition/situation	2.57	1.22	.73	14.74		
(o) Realized that you could avoid the condition/situation in the future by visiting the area at a different time	2.60	1.15	.63	9.91		
Activity Substitution					.68	.75
(m) Planned to do other things besides boating to avoid the condition or situation	1.83	.96	.73	16.68		
(b) Realized that doing some activity other than boating would allow you to avoid the condition/situation	1.86	1.03	.72	16.38		

Table 10 continued

Resource Substitution					.64	.73
(p) Decided that you would come back to the lake at the same time, but would visit a different area of the lake to avoid the condition/situation	2.20	1.07	.79	14.22		
(s) Realized that visiting different areas of the lake would allow you to avoid the condition/situation	2.19	1.06	.60	11.50		
Rationalization					.69	.73
(h) Told yourself that there was nothing you could do about it, so you just enjoyed the experience for what it was	2.65	1.13	.62	10.23		
(k) Told yourself the condition or situation was actually a symptom of some larger problem	2.34	1.08	.74	13.71		
Product Shift					.60	.63
(c) Told yourself it was unreasonable to expect that things should have been different in this area	2.31	1.13	.68	7.12		
(q) Decided that, for this area, the condition/situation was what it should be	2.63	1.08	.68	6.23		
Direct Action					.73	.74
(d) Talked with other members of your group about the condition/situation	2.50	1.11	.65	11.62		
(g) Decided to talk with lake personnel about the condition/situation	2.21	1.06	.79	17.75		
(i) Decided to talk to someone who could do something about the condition/situation	2.37	1.12	.72	15.98		

The validity of latent variables (i.e., absolute displacement, temporal substitution, activity substitution, resource substitution, rationalization, product shift, and direct action) was addressed by examining correlations among the variables (see Table 11).

TABLE 11 Correlation Estimates (Φ)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Absolute Displacement (1)	1.00						
Temporal Substitution (2)	.35	1.00					
Activity Substitution (3)	.03	.46	1.00				
Resource Substitution (4)	.52	.34	.62	1.00			
Rationalization (5)	.48	.56	.63	.42	1.00		
Product Shift (6)	.48	.40	.44	.08	.05	1.00	
Direct Action (7)	.64	.38	.67	.44	.48	.71	1.00

By conducting a CFA, we can determine the overall quality of the measurement model. The fit indices of the measurement model showed an acceptable model fit (χ^2=446.66, df=99, RMSEA=.09 NNFI=.91, CFI=.93). Since two of the constructs (i.e., stress and appraisal) were manifest variables, only the internal consistency of coping items were assessed (see Table 10). The goodness-of-fit indices are shown in Table 12.

TABLE 12 Model Testing Procedures for Korean Respondents

Model	χ^2	df	RMSEA	NNFI	CFI
Measurement Model	446.66	99	.09	.91	.93
Structural Model	387.77	92	.08	.92	.94

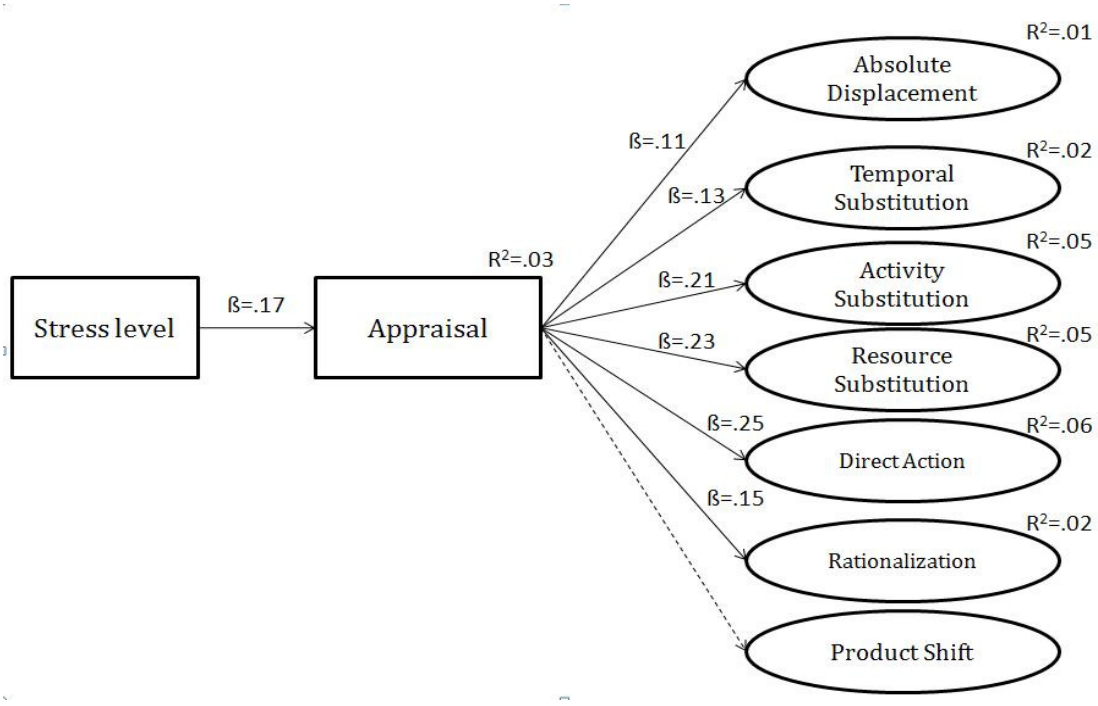
4.2.3. Structural Model

After confirming the adequacy of the measurement model (see Table 12), I examined the hypothesized structural relationship among stress, appraisal, and coping (H1). Specifically, I hypothesized that recreationists who negatively appraise a stressful situation are more likely to display a high level of stress (H1-1: a negative relationship between stress level and appraisal). Further, I hypothesized that there is a positive relationship between appraisal and behavioral coping (i.e., absolute displacement, temporal, activity, resource substitution, and direct action) (H1-2, H1-3, H1-4, H1-5, H1-6, respectively). Alternately, I hypothesized a negative relationship between appraisal and cognitive coping (i.e., rationalization and product shift) (H1-7 and H1-8). To test these hypotheses, I first identified non-significant structural coefficients. One of the hypothesized paths (i.e., appraisal → product shift) (H1-8) was removed from the model on the basis of non-significant t-values (Schumacker & Lomax, 2004). I checked the modification indices and there was no need to specify additional parameters.

Figure4 depicts the tested structural paths and coefficients. As shown in Table 12, the model showed a satisfactory fit between the hypothesized model and the data (χ^2=387.77, df=92, RMSEA=.08 NNFI=.92, CFI=.94).

As presented in Figure 4, coping dimensions showed low R-square values. Cognitive appraisal accounted for coping dimensions from 1% to 6%. The variance explaining coping dimensions was poor. To verify the strength of the hypothesized model, I conducted a power analysis using SAS 9.20. Statistical power is the probability of rejecting the null hypothesis when the null hypothesis is false. It tells that probability

of avoiding a type II error, which occurs when a researcher concludes that a hypothesis is true when it is actually false (called false positive). MacCallum, Browne, and Sugawara (1996) suggested a power analysis framed in terms of RMSEA (ε). Power means the probability of rejecting the null hypothesis of close fit where ε ≤ .05. With df=92 and n=462, the power of our structural model was shown to be strong (π=.99) (Cohen, 2003). That is, this structural model had only one percent of the probability of a false positive (e.g., concluding a false hypothesis is true).



Note: Dashed line indicates a path that was not significant at .05

FIGURE 4 Structural relationships between stress, appraisal, and coping for Korean respondents.

The structural paths are consistent with the hypotheses among variables except for H1-7 and H1-8 (the relationship between appraisal and rationalization, and between appraisal and product shift). I hypothesized a negative relationship between appraisal and rationalization as well as product shift. However, there was a positive relationship between appraisal and rationalization and there was no significant (p >.05) relationship between appraisal and product shift. Between 1% and 6% of the variance in the coping dimensions was explained by appraisal.

In H1-1, I proposed a negative relationship between stress level and appraisal. However, appraisal was positively predicted by stress level (β=.17, t=3.64, p < .001). Korean respondents with a higher level of reported stress were more likely to appraise the situation in a positive way (e.g., Even though I was stressed, I can overcome this situation). Stress accounted for 3% of the variance of appraisal.

In H1-2, I proposed a positive relationship between appraisal of the stressful situation and absolute displacement. As hypothesized, Korean respondents who positively appraised the stressful situation were more likely to be displaced from the lake (β=.11, t=2.16, p< .05). Appraisal explained 1% of the variance of absolute displacement.

In H1-3, I proposed a positive relationship between appraisal and temporal substitution. Consistent with the hypothesis, Korean respondents who positively appraised the stressful situation were more likely to engage in temporal substitution (β=.13, t=2.88, p< .01). Appraisal accounted for 2% of the variance of temporal substitution.

In H1-4, I proposed a positive relationship between appraisal and activity substitution. The results show that Korean respondents who positively appraised the stressful situation were more likely to change their activity (β=.21, t=4.07, p< .001). Appraisal accounted for 5% of the variance of activity substitution.

In H1-5, I proposed a positive relationship between appraisal and resource substitution. As hypothesized, resource substitution was positively predicted by appraisal (β=23, t=4.4, p< .001). Korean respondents were likely to change the location of their boating when they positively appraised stressful conditions on the lake (e.g., I think I can overcome this situation). Appraisal explained 5% of the variance of resource substitution.

In H1-6, I proposed a positive relationship between appraisal and direct action. As expected, direct action was positively predicted by appraisal (β=.25, t=5.0, p< .001). Korean respondents were more likely to complain about the stressful situation (direct action) on the lake to the lake management personnel or other members of their group. Appraisal accounted for 6% of the variance of direct action.

In H1-7, I proposed a negative relationship between appraisal and rationalization. Contrary to the hypothesis, there was a positive relationship between appraisal and rationalization. When Korean respondents concluded that they could not overcome the situation (negative appraisal of the situation), they were likely to engage in rationalization (e.g., try to think of the situation in a positive way). Appraisal explained 2% of the variance of rationalization.

In H1-8, I proposed a negative relationship between appraisal and product shift. However, there was no significant (p >.05) relationship between the two constructs.

4.2.4. The Moderating Effect of Place Attachment on the Relationships among Stress, Appraisal, and Coping

In addition to hypotheses testing for the pooled sample, I also examined whether place attachment had a moderating effect on the structural relationships among stress, appraisal, and coping. Place attachment was measured by 17 items (see Table 4). Using the summed scores of all place attachment items, the pooled sample was divided into two groups around the median score; one reflecting recreationists with high place attachment (n=213) and the second with low place attachment (n=240). Table13 summarizes the model testing procedure for the baseline model. The structural model showed an acceptable fit for both groups.

TABLE 13 Summary of Model Testing Procedures for Two Place Attachment Groups

Model	χ^2	df	RMSEA	NNFI	CFI
High place attachment group (n=213)	243.98	92	.08	.88	.92
Low place attachment group(n=240)	275.40	92	.08	.90	.93

After confirming the fit of the baseline models, invariance testing (Bollen, 1989) was used to compare the measurement and structural models (Figure 1) across the two groups (i.e., high and low place attachment).The test of invariance was used to compare equality across groups in terms of: a) factor structure (examining the suitability of the factor solution for the hypothesized model), b) factor scaling (examining the invariance of factor loadings across groups), and c) beta coefficients (testing the equality of

regression paths for groups). Each group's covariance structure was the focus of invariance testing to examine the similarities or differences between the groups. Beginning with the factor structure, the invariance of factor scaling was tested, and most importantly, the equality of the beta coefficients was examined. For each test, goodness-of-fit indices were inspected to identify the effect of the imposed constraint. If there was no significant difference, which was determined by the χ^2 difference test, we could conclude that there was no difference across the groups.

TABLE 14 Summary of the Invariance Tests (Moderator: Place Attachment)

Model	χ^2	df	RMSEA	NNFI	CFI
H_1 Equality of structure	597.58	198	.09	.88	.91
H_2 Equality of factor scaling	607.66	206	.08	.89	.91
H_3 Equality of beta coefficients	539.10***	191	.08	.90	.93
Final model H_3a (after beta coefficients held independently invariant) [a]	519.38	184	.08	.90	.93

***p<.001

[a] The following parameters were permitted to be freely estimated across groups: β21, β32, β42, β52, β62, β72, β92

Table 14 shows the results of the invariance tests. First, the suitability of the imposed factor structure for the two groups (high and low place attachment) was examined. The fit of the unconstrained model showed an acceptable fit (χ^2=597.58, df=198, RMSEA=.09, NNFI=.88, CFI=.91). This model was used as a comparison point

for the second test, which was the equality of factor scaling. Also, the χ^2 difference test was used to examine support for equality constraints (Byrne, 1998).

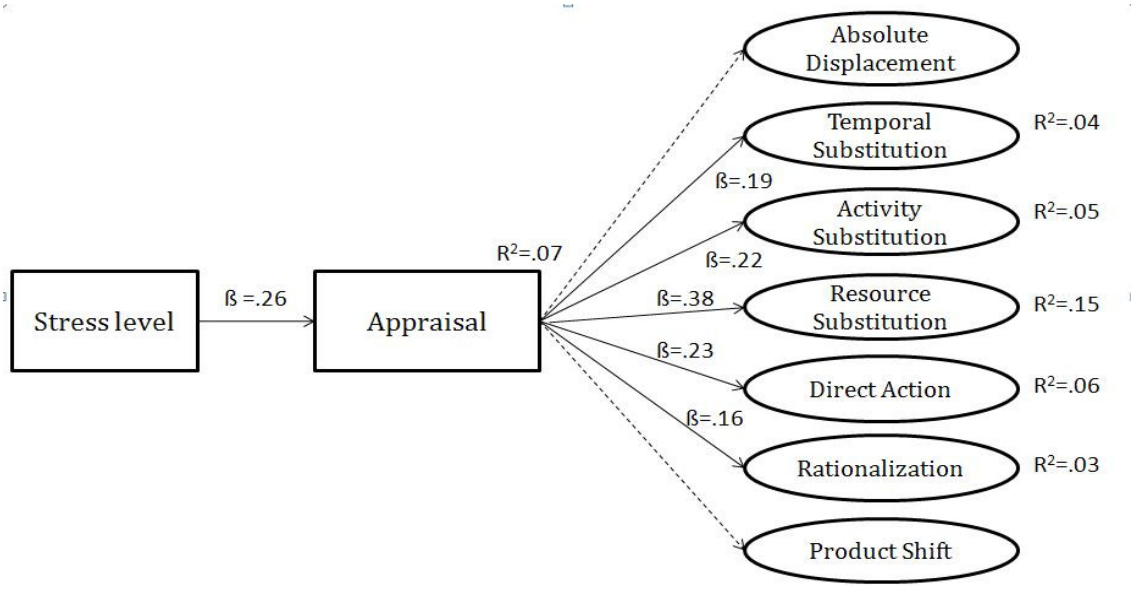
The next step was the test of the equality of the factor scaling. The minimum condition for factorial invariance is the equality of factor loadings (Marsh, et a., 1998). After imposing equality constraints on all factor loadings (equality of factor scaling), the fit of the previous model with no constraints (equality of factor structure) was compared with the fit of the constrained model. The χ^2 difference test showed that this constraint (equality of factor scaling) did not significantly impair fit ($\Delta \chi^2$=10.08, Δdf=8). Thus, the pattern of factor loadings was held constant for the two place attachment groups.

The third invariance test was to assess the equality of beta coefficients (structural paths) across the two place attachment groups. First, the test required holding invariant the beta coefficients. Then, the fit of this model was compared with the fit of the previously tested model; equality of factor scaling. The χ^2 difference test indicated a significantly worse fit ($\Delta \chi^2$=539.10, Δdf=191) after imposing equality constraints on the beta coefficients. Each parameter within the beta matrix (β) was then independently tested to identify which parameters were variant across the groups. And the tests indicated that all regression paths (β21, β32, β42, β52, β62, β72, β82) except β92 (appraisal → product shift), needed to be freely estimated across both groups (see Table 12). The final model displayed a satisfactory fit for these data (χ^2=519.38, df=184, RMSEA=.08, NNFI=.90, CFI=.93).

In addition, I conducted a power analysis, suggested by MacCallum, et al. (1996), for the final model (H3a). Power means the probability of rejecting the null hypothesis

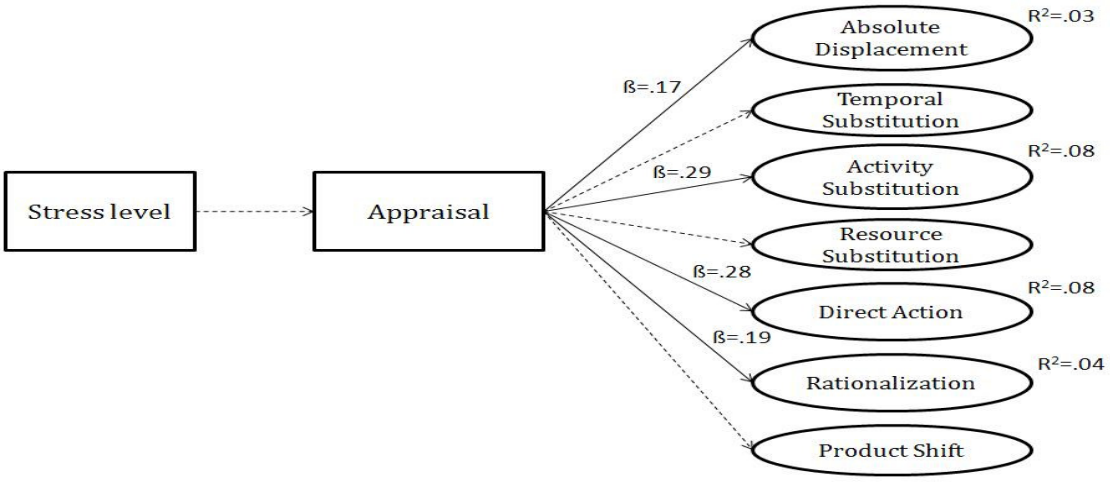
of close fit where ε≤ .05. With df=184 and n=462, the power of our structural model was shown to be strong (π=.99) (Cohen, 2003). That is, this structural model had only one percent of the probability of a false positive (e.g., concluding a false hypothesis is true).

Overall, there was a difference (p<.05) between the two place attachment groups in terms of the strength of hypothesized paths (see Figures 5 and Figure 6). Thus, H2, in which I proposed a moderating effect of place attachment on the relationships between stress level, appraisal, and coping was supported by this analysis.



Note: Dashed line indicates a path that was not significant at .05

FIGURE 5 The relationships among stress, appraisal, and coping for the high place attachment group.



Note: Dashed line indicates a path that was not significant at .05

FIGURE 6 The relationships among stress, appraisal, and coping for the low attachment group.

In H2-1, I proposed that, for recreationists with a high place attachment, their stress level had a negative influence on the appraisal of a stressful situation. This was not supported by the analysis. For the relationship between stress and appraisal, there was a positive relationship between the two variables for the high place attachment group (β=.26, t=3.84, p< .001). Furthermore, there was no significant (p >.05) relationship between the two for the low place attachment group. That is, Korean respondents who were highly attached to the lake area were more likely to appraise the stressful situation in a positive way under the stressful situation. For this group, stress level accounted for 7% of the variation in appraisal. However, for respondents who had a low place attachment to the lake, their stress level did not have any impact on their appraisal of the site condition.

In H2-2, I hypothesized that more attached recreationists would be less inclined to be displaced from the lake (absolute displacement) than their less attached counterparts. This hypothesis was rejected. There was no significant (p >.05) relationship between appraisal and absolute displacement for the high place attachment group. However, there was a positive relationship between appraisal and absolute displacement for the low place attachment group (β=.17, t=2.23, p< .05). That is, respondents with a low place attachment were more likely to be displaced from the lake because of the stressful situation. Appraisal accounted for 3% of the variance in absolute displacement for the low attachment group.

In H2-3, I hypothesized that more attached recreationists would be more inclined to change the timing of their boating (temporal substitution) than their less attached counterparts. This was supported by the analysis. There was a positive relationship between appraisal and temporal substitution for the high place attachment group (β=.19, t=2.84, p< .01). Korean respondents with a high place attachment were more likely to change the time they visited the lake because of the potential for encountering the stressful situation. Appraisal explained 4% of the variation in temporal substitution for the high place attachment group. For the low attachment group, there was no significant (p >.05) relationship between the two constructs.

In H2-4, I hypothesized that more attached recreationists would be more inclined to change the type of boating activity (activity substitution) than their less attached counterparts. This hypothesis was supported by the data. Activity substitution was positively predicted by appraisal for both groups. However, the strength of the beta

coefficient was stronger for the low place attachment group (β=.29, t=3.97, p< .001) compared to the high place attachment group (β=.22, t=2.62, p< .01). Changing the type of boating activity was an option for both groups and respondents with low place attachment were more likely to change the activity when they experienced a stressful situation. For the high attachment group, appraisal accounted for 5% of the variation in activity substitution and 8% in the low attachment group.

In H2-5, I hypothesized that more attached recreationists would be less inclined to change the location of their boating (resource substitution) than their less attached counterparts. This hypothesis was rejected by analysis. Resource substitution was positively predicted by appraisal only for the high place attachment group (β=.38, t=4.42, p< .001), which means respondents with a high place attachment were more likely to change the location of their boating under a stressful condition. Considering the nature of the items, this relationship makes sense because the questions used for measuring resource substitution were related to altering the location of boating within the lake, not changing the site to other lakes because of the stressful situations. Past work has shown those most attached to a place are often most familiar with the resources (Moore & Graefe, 1994; Young, et al., 1991). Consequently, in the context of these data attached respondents were more likely to know the location of alternatives where they could boat on the same lake. Appraisal explained 15% of the variation in resource substitution for the high place attachment group. There was no significant (p >.05) relationship between appraisal and resource substitution for the low attachment group.

In H2-6, I hypothesized that more attached recreationists would be more inclined to complain about the stressful situation (direct action) than their less attached counterparts. This was supported by analysis. Appraisal positively influenced direct action for both groups. However the strength of the beta coefficient was stronger for the low place attachment group (β=23, t=3.18, p< .01) compared to the high place attachment group (β=.28, t=3.88). Respondents with a low attachment to the lake were more likely to react to a stressful situation in a direct way (e.g., complaining to the service managers). Appraisal explained 6% of the variation in the high place attachment group and 8% in the low attachment group.

In H2-7, I hypothesized that more attached recreationists would be less inclined to rationalize the stressful situation (rationalization) than their less attached counterparts. This hypothesis was rejected. Rationalization was positively predicted by appraisal for both groups. The strength of the beta coefficient was stronger for the low place attachment group (β=.19, t=2.41, p< .05) compared to the high attachment group (β=.16, t=2.13, p< .05). For both groups, respondents tried to rationalize the situation in a positive way. But this tendency was statistically stronger for the low attachment group. Appraisal accounted for 3% of the variation in rationalization in the high attachment group and 4% in the low place attachment group.

In H2-8, I hypothesized that more attached recreationists would be less inclined to adjust the meaning of their recreational activity because of the stressors (product shift) than their less attached counterparts. This hypothesis was rejected. There was no significant (p >.05) relationship between appraisal and product shift for either group.

4.2.5. The Moderating Effect of Leisure Activity Involvement on the Relationships among Stress, Appraisal, and Coping

Invariance testing was also conducted to determine whether leisure activity involvement had a moderating effect on the relationship among stress, appraisal, and coping (H3). This moderating effect was again examined using invariance testing among two groups: Korean recreationists with high and low leisure activity involvement. The baseline model (Figure 4) was used to test the moderating effect of activity involvement. Leisure activity involvement was measured with 25 items (see Table 5). After summing the score of all 25 items, the pooled sample was divided into two groups around the median: Korean respondents with high leisure activity involvement (n=215) and those with low leisure activity involvement (n=239). Table 15 shows the model testing procedure for the baseline model. The fit indices of the models showed an acceptable fit for both groups. I then used the same testing protocols for examining variation among the two involvement groups as described in testing for variation across the place attachment groups.

TABLE 15 Summary of Model Testing Procedures for the Two Leisure Activity Involvement Groups

Model	χ^2	df	RMSEA	NNFI	CFI
High Leisure Activity Involvement Group (n=215)	228.14	92	.07	.90	.93
Low Leisure Activity Involvement Group (n=239)	288.11	92	.09	.91	.93

Table 16 displays the results of the invariance testing. First, the suitability of the imposed factor structure was examined. The results showed that both groups shared the same factor structure. The fit of the unconstrained model showed an acceptable fit (χ^2=587.91, df=198, RMSEA=.09, NNFI=.90, CFI=.93). This model was used as a comparison point for the next test which examined the equality of factor scaling (i.e., factor loadings).

After imposing equality constraints on all factor loadings, the fit of the previous model (equality of factor structure) was compared with the fit of the constrained model (equality of factor scaling). The χ^2 difference test indicated that this constraint did not significantly impair the fit of the model ($\Delta \chi^2$=8.2, Δdf=8). Thus, the pattern of factor loadings was held constant for the two leisure activity involvement groups.

The third invariance test was conducted to examine the equality of the beta coefficients for the structural relationships across the two involvement groups. The fit of the model, while holding beta coefficients invariant, was compared with the fit of the previous model (equality of factor scaling). The χ^2 difference test indicated a significantly worse fit ($\Delta \chi^2$=57.32, Δdf=7) after imposing equality constraints on the

beta coefficients. Then, each parameter within the beta matrix (β) was independently tested to determine which parameters were variant across the groups. The tests showed that all paths were variant and thus needed to be freely estimated across the groups (see footnote in Table 14). The final model after the free estimation of the beta coefficients showed a satisfactory fit of the model for this data (χ^2=525.36, df=192, RMSEA=.08, NNFI=.91, CFI=.98).

TABLE 16 Summary of Invariance Tests (Moderator: Leisure Activity Involvement)

Model	χ^2	df	RMSEA	NNFI	CFI
H_1 Equality of structure	587.91	198	.09	.90	.93
H_2 Equality of factor scaling	596.13	206	.08	.90	.93
H_3 Equality of beta coefficients	538.81***	199	.08	.91	.94
Final model H_3a (after beta coefficients held independently invariant) [a]	525.36	192	.08	.91	.94

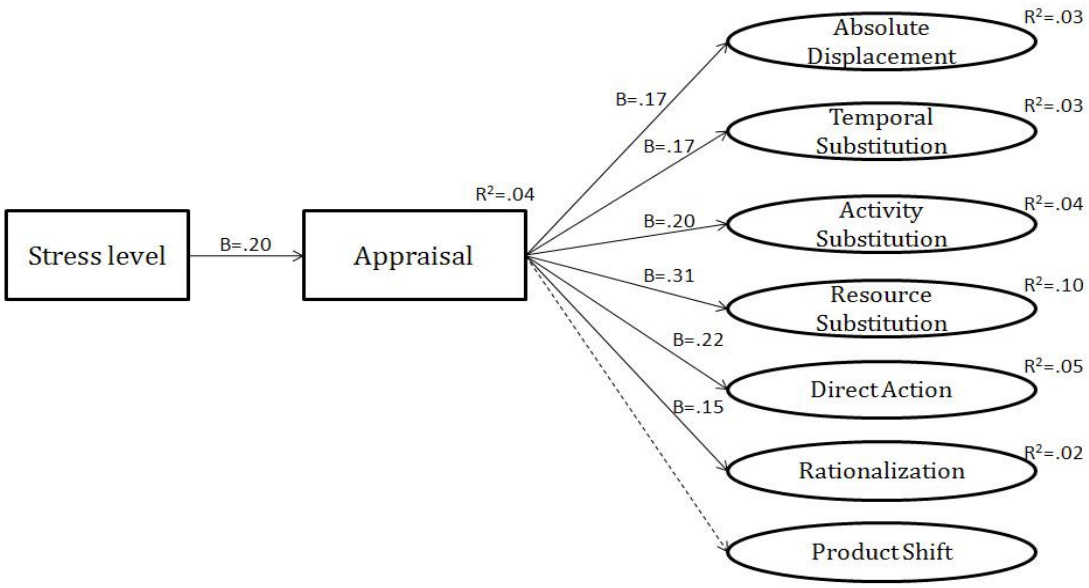
***p<.001

[a] The following parameters were permitted to be freely estimated across groups: β21, β32, β42, β52, β62, β72, β82**,** β92

In addition, I conducted a power analysis, suggested by MacCallum, et al. (1996), for the final model (H3a). Power means the probability of rejecting the null hypothesis of close fit where $\varepsilon \leq .05$ (when a researcher makes a false conclusion by deciding a false hypothesis as true). With df=192 and n=462, the power of our structural model was

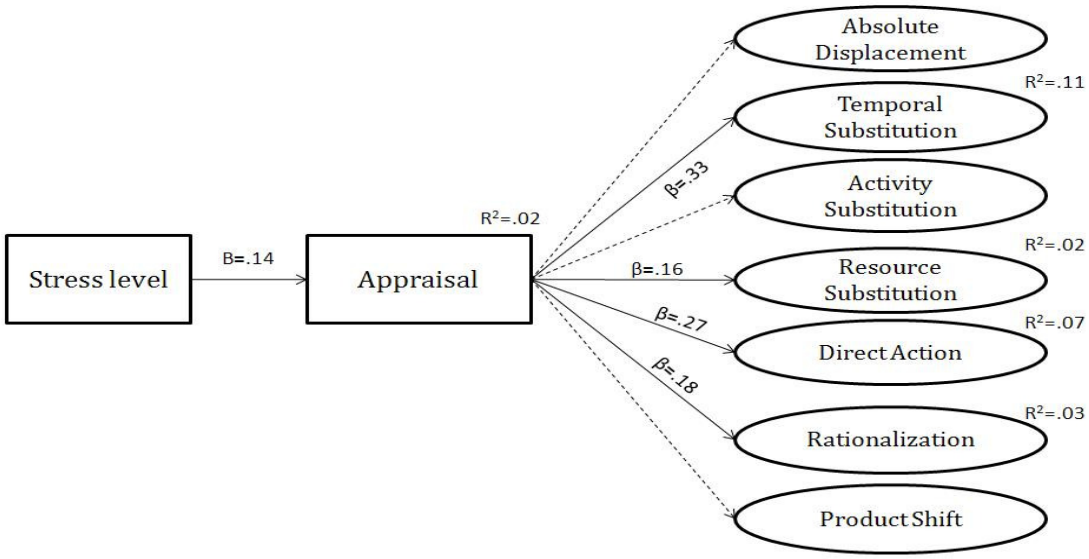
shown to be strong (π=0.99) (Cohen, 2003). That is, this structural model had only one percent of the probability of a false positive (e.g., concluding a false hypothesis is true).

Overall, the invariance tests indicated that there was a difference (p<.05) between the leisure involvement groups in terms of the structural paths (see Figures 7 and Figure 8). Thus, H3, which proposed a moderating effect of leisure activity involvement on the hypothesized relationship among stress, appraisal, and coping, was supported. Specifically, the following hypotheses were tested.



Note: Dashed line indicates a path that was not significant at .05

FIGURE 7 The relationships among stress, appraisal, and coping for the high leisure activity involvement group.



Note: Dashed line indicates a path that was not significant at .05

FIGURE 8 The relationships among stress, appraisal, and coping for the low leisure activity involvement group.

In H3-1, I hypothesized that, for recreationists with a high leisure activity involvement, stress level is negatively related to the appraisal of the stressful situation compared to their less involved counterparts. The result did not support this hypothesis. For both involvement groups, stress was positively related to appraisal; high involvement (β=.20, t=2.88, p< .01) and low involvement (β=.14, t=2.15, p< .05). For both groups, respondents were more likely to conclude that they could overcome the stressful situation. Stress explained 4% of the variation in appraisal in the high involvement group and 2% in the low involvement group.

In H3-2, I hypothesized that more involved recreationists would be more inclined to be displaced (absolute displacement) than their less involved counterparts. The result

supported this hypothesis. There was a positive relationship between appraisal and absolute displacement for the high leisure involvement group (β=.17, t=2.41, p< .05). Respondents with a high leisure activity involvement were more likely to leave the lake altogether when they thought they could do something about the stressful situation. Since they were not necessarily attached to the place itself, they may prefer to visit a place with no stress to enjoy boating. Appraisal accounted for 3% of the variation in absolute displacement in the high involvement group. There was no significant (p >.05) relationship between stress appraisal and absolute displacement for the low leisure activity involvement group.

In H3-3, I hypothesized that the more involved recreationists would be more inclined to change the timing of their boating (temporal substitution) than their less involved counterparts. The result supported this hypothesis. There was a positive relationship between appraisal and temporal substitution for the high leisure activity involvement group (β=.17, t=2.61, p< .01). However, there was no significant (p >.05) relationship between appraisal and temporal substitution for the low involvement group. Respondents with a high leisure involvement were more likely to change the time they visited a given location to avoid a stressful situation. Appraisal accounted for 3% of the variation in temporal substitution in the high involvement group. There was no significant (p>.05) relationship between appraisal and temporal substitution for low involvement group.

In H3-4, I hypothesized that the more involved recreationists would be less inclined to change the type of boating activity (activity substitution) than their less

involved counterparts. The result did not support this hypothesis. Rather, activity substitution was positively predicted by appraisal (β=.20, *t*=2.59, *p*< .01) for both the high involvement group and the low involvement group (β=.33, *t*=4.31, *p*< .001). This result is contrary to the hypothesis. However, according to the results of the invariance test, the strength of the beta coefficient was stronger for the low leisure activity involvement group. Even though activity substitution was considered by recreationists with high and low involvement, respondents with lower leisure involvement were much more likely to substitute the activity due to negative conditions on the lake. Appraisal accounted for 4% of the variation in activity substitution in the high involvement group and 11% in the low involvement group.

In H3-5, I hypothesized that the more involved recreationists would be more inclined to change the location of their boating (resource substitution) than their less involved counterparts. This hypothesis was supported by the results. Resource substitution was positively predicted by appraisal for the high activity involvement group (β=.31, *t*=3.93, *p*< .001) and the low involvement group (β=.16, *t*=2.22, *p*< .05). For both groups, changing the location of the boating activity within the lake was an available coping strategy. The strength of the beta coefficient was stronger for the high involvement group, who were more likely to first consider the boating activity they prefer compared to the location of the activity. Appraisal explained 10% of the variation in resource substitution in the high involvement group and 2% in the low involvement group.

In H3-6, I hypothesized that the more involved recreationists would be more inclined to complain about the stressful conditions (direct action) than their less involved counterparts. This hypothesis was supported by analysis. Direct action was supported by appraisal in a positive way for the high leisure activity involvement group (β=.22, t=3.05, p< .01) and the low leisure involvement group (β=.27, t=3.80, p< .001). Complaining about the stressors on the lake was an available coping option for both groups when they thought they could do something about the stressors to improve the situation. Appraisal accounted for 5% of the variation in the high involvement group and 7% in the low involvement group.

In H3-7, I hypothesized that the more involved recreationists would be less inclined to rationalize the stressful situation (rationalization) than their less involved counterparts. The result did not support this hypothesis. Rationalization was positively influenced by appraisal both for the high involvement group (β=.15, t=2.09, p< .05) and low involvement group (β=.18, t=2.13, p< .05). Even when respondents concluded that they could overcome the situation, they rationalized the stressful situation in order to enjoy the activity. Appraisal explained 2% of the variation in the high involvement group and 3%in the low involvement group.

In H3-8, I hypothesized that the more involved recreationists would be less inclined to change the meaning of boating because of stressful situations (product shift) than their less involved counterparts. However, I found no statistically significant relationship (p>.05) between the two variables.

4.2.6. The Moderating Effect of Self-Construal on the Relationships among Stress, Appraisal, and Coping

Using invariance testing (Bollen, 1989), the moderating effect of culturally different types of self-construal on the relationship between stress, appraisal, and coping were tested. Two types of self-construal, independent and interdependent, were measured using a 20 item scale. A total score for each type of self-construal was calculated. Using the median score of independency (sum of the items measuring self-independency), the pooled sample was divided into two groups: Korean recreationists with a strong independent self-construal (n=185) and those with a weak independent self-construal (n=257). Before conducting invariance tests, the model fit of the baseline model for both groups was assessed. Both baseline models with the hypothesized structural relationships showed an acceptable fit for the data (see Table 17).

TABLE 17 Summary of Model Testing Procedures for the Two Self-construal Groups

Model	χ^2	df	RMSEA	NNFI	CFI
High Independency Group (n=185)	198.01	92	.07	.90	.93
Low Independency Group (n=257)	324.04	92	.09	.90	.93

After confirming the fit of the two baseline models, invariance tests were conducted to compare the invariance of factor structure, factor scaling, and beta coefficients across the two groups. The covariance matrices were the focus of the invariance testing to examine the similarities between groups. The χ^2 difference test was

used to determine the significant differences between models for each test. Table 18 summarizes the results of the invariance testing. The suitability of the imposed factor structure for the two groups was first examined. The model had the same pattern of factor loading, variance/covariance, and beta coefficient matrices. The fit of this unconstrained model was good (χ^2=586.82, df=198, RMSEA=.09, NNFI=.90, CFI=.92). This model was used as a comparison point for the second invariance test of factor scaling. After imposing constraints on all factor loadings (equality of factor scaling), the fit of the previous model with no constraints (equality of factor structure) was compared with the fit of the constrained model. The χ^2 difference test indicated that this constraint (equality of factor scaling) did not significantly impair fit ($\Delta \chi^2$=9.78, Δdf=8). Thus, the pattern of factor loadings was held constant for the two independency groups.

The third invariance test was of the invariance of beta coefficients across the two groups. This test required holding the beta coefficients equal. Then, the fit of this model was compared with the fit of the previous model tested (equality of factor scaling). The χ^2 difference test indicated a significantly worse fit ($\Delta \chi^2$=53.38, Δdf=16) after imposing equality constraints on the beta coefficients. Each parameter was independently tested to identify which parameter within the beta matrix (β) was variant across the groups. The results indicated that all regression paths (β21, β32, β42, β52, β62, β72, β82, β92) needed to be freely estimated across the groups. The final model after the free estimation of these parameters showed a satisfactory fit of the model for this data (χ^2=530.22, df=192, RMSEA=.08, NNFI=.90, CFI=.93).

In addition, I conducted a power analysis, suggested by MacCallum, et al. (1996), for the final model (H3a). Power means the probability of rejecting the null hypothesis of close fit where $\varepsilon \leq .05$. With df=192 and n=462, the power of our structural model was shown to be strong (π=0.99) (Cohen, 2003).

TABLE 18 Summary of Invariance Tests (Moderator: Self-construal)

Model	χ^2	df	RMSEA	NNFI	CFI
H_1 Equality of structure	586.82	198	.09	.90	.92
H_2 Equality of factor scaling	596.60	206	.08	.90	.92
H_3 Equality of beta coefficients	543.22***	190	.08	.90	.93
Final model H_3a (after beta coefficients held independently invariant) [a]	530.22	192	.08	.90	.93

***p<.001

[a] The following parameters were permitted to be freely estimated across groups: β21, β32, β42, β52, β62, β72, β82, β92

H4 was supported by analysis (see Figure 9 and Figure 10). There was a moderating effect of self-construal on the relationship between stress, appraisal, and coping (χ^2=530.23, df=192, RMSEA=.09, NNFI=.91, CFI=.93).

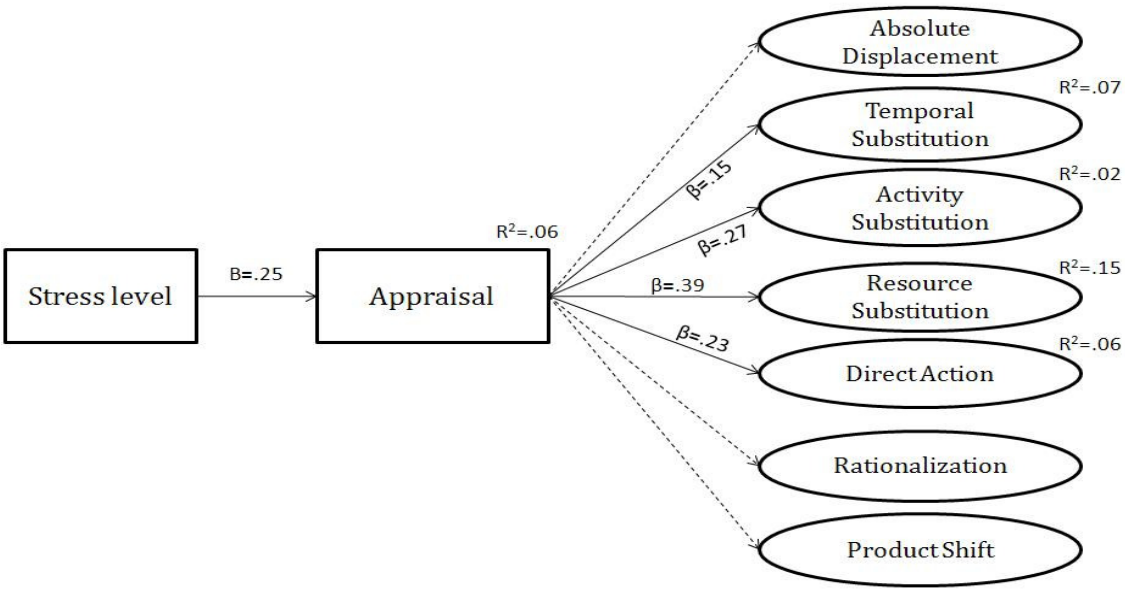


FIGURE 9 The relationships among stress, appraisal, and coping for respondents with a strong independent self-construal.

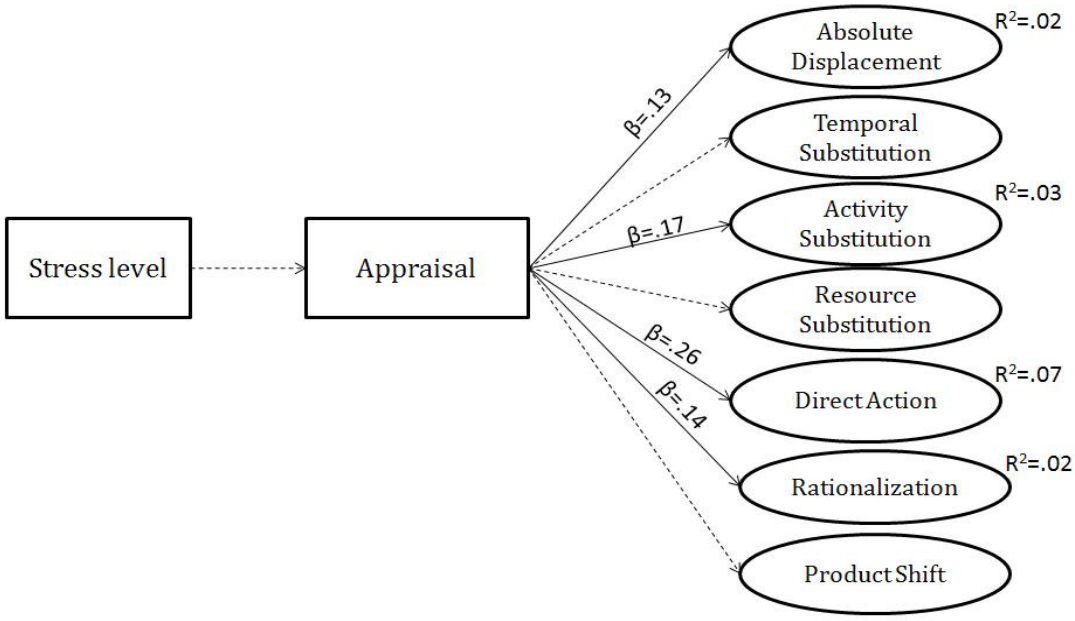


FIGURE 10 The relationships among stress, appraisal, and coping for respondents with a weak independent self-construal.

In H4-1, I proposed that, for recreationists who have a strong independent self-construal, stress level is negatively related to the appraisal of the situation. This hypothesis was not supported. Appraisal was positively predicted by stress level (β=.25, t=3.59, p< .001) for recreationists with a strong independent self-construal. For this group stress explained 6% of the variation in appraisal. However, for Korean respondents with a weak independent self-construal, there was no significant (p>.05) relationship between stress and appraisal.

In H4-2, I hypothesized that the more independent recreationists would be more inclined to be displaced (absolute displacement) than their less independent counterparts. The result did not support this hypothesis. There was no significant (p>.05) relationship between appraisal and absolute displacement for respondents with a more independent self-construal. Instead, there was a positive relationship between the two variables for those with a weak independent self-construal (β=.13, t=2.03, p< .05). For this group, appraisal accounted for 2% of the variance in absolute displacement.

In H4-3, I hypothesized that the more independent recreationists would be more inclined to change the timing of their boating (temporal substitution) than their less independent counterparts. This hypothesis was supported. Temporal substitution was predicted by appraisal in a positive way (β=.15, t=2.41, p< .05) for those with a high independent self-construal. For this group, appraisal accounted for 2% of the variation in temporal substitution. And there was no significant (p >.05) relationship between the two variables for recreationists with a weak independent self-construal.

In H4-4, I hypothesized that the independent recreationists would be more inclined to change the type of boating activity (activity substitution) than their less independent counterparts. This hypothesis was supported. There was a positive relationship between activity substitution and appraisal for those with a strong independent self-construal (β=.27, t=3.22, p< .01). However, activity substitution was positively predicted by appraisal for those with a weak independent self-construal (β=.17, t=2.54, p< .05). Respondents with a less independent self-construal were likely to change the type of boating activity when they perceived a stressful situation. Appraisal accounted for 7% of the variation in the high independence group and 3% in the low independence group.

In H4-5, I hypothesized that the more independent recreationists would be more inclined to change the location of their boating (resource substitution) than their less independent counterparts. The result supported this hypothesis. Resource substitution was positively predicted by appraisal (β=.39, t=4.67, p< .001) for those with a strong independent self-construal. Appraisal explained 15% of the variation in resource substitution for this group. However, there was no significant (p >.05) relationship between the two variables for those with a weak independent self-construal.

In H4-6, I hypothesized that the more independent recreationists would be more inclined to complain about the stressful conditions (direct action) than their less independent counterparts. The result supported this hypothesis. Direct action was positively predicted by appraisal for recreationists with a strong independent self-construal (β=.23, t=2.82, p< .01), and for those with a weak independent self-construal

(β=.26, t=4.02, p< .001). When respondents concluded that they could overcome the situation, they were more likely to complain about the situation to the service provider or other group members. Appraisal accounted for 5% of the variation in the high independence group and 7% in the low independence group.

In H4-7, I hypothesized that the independent recreationists would be less inclined to rationalize the stressful situation (rationalization) than their less independent counterparts. This hypothesis was not supported. There was no significant (p >.05) relationship between appraisal and rationalization for those with a strong self-construal. However, there was a positive relationship between the two variables for those with a weak independent self-construal (β=.14, t=2.11, p< .05). That is, respondents were more likely to rationalize the stressful situation on the lake. Appraisal explained 3% of the variation in rationalization in the high independence group and 2% in the low independence group.

In H4-8, I hypothesized that the more interdependent recreationists would be less inclined to change the meaning of their boating activity because of stressors on the lake (product shift) than their less interdependent counterparts. There was no significant (p >.05) relationship between the two variables for either group.

4.2.7. Types of Self-Construal for Korean and American Respondents

H5 proposed that Americans were more likely to have a more independent self-construal than Koreans. This hypothesis was supported by analysis. To compare their independence, a sum score of six items measuring self-independence was created. The

independent-samples *t* -test was conducted to compare self-independence for Americans and Koreans (see Table 19). There was a significant difference with regard to independence for Americans (M=39.16, SD=4.59) and Koreans (M=36.26, SD=3.03) (*t*=7.76, *p* -value=.000). These results indicated that Americans had a higher independent self-construal compared to Koreans.

TABLE 19 Independent Samples T-test of Independence

	N	Mean	SD	*t*	Sig.
Americans	178	39.15	4.59	7.76	<.001
Koreans	442	36.26	3.03		

H6 hypothesized that Koreans are more likely to have more interdependent self-construals than Americans of European descent. This hypothesis was also supported by the results. To compare the two groups' interdependency, I made a summation of six items measuring self-interdependency. Using this summed score, I conducted an independent-samples *t*-test to compare their self-interdependency (see Table 20). There was a significant difference between Americans of European descent (M=32.84, SD=4.59) and Koreans (M=35.53, SD= 3.02) (*t*=7.19, *p*<.001) in terms of their interdependency. Thus, Koreans were more likely to have an interdependent self-construal.

TABLE 20 Independent Samples T-test of Interdependency

	N	Mean	SD	*T*	Sig.
Americans	178	32.84	4.59	7.19	<.001
Koreans	442	35.53	3.02		

4.2.8. Independent T-test for Rationalization by Country

Since previous coping research has indicated that people with stronger interdependent self-construal, for example as East Asians, were more likely to choose a cognitive coping strategy (e.g., rationalization) to avoid conflicts with others (Chun, et al., 2006; Morling & Fiske, 1999). The results of this study partially supported the previous work: Korean recreationists tended to positively evaluate negative setting conditions even though they perceive stressors at the lake. Thus, in addition to the hypotheses testing, I there was also need to test the new hypothesis 7: whether Koreans respondents, who had more interdependent self-construal compared to American respondents (this was supported by analysis as well), were more likely to choose rationalization as their coping strategy. The hypothesis is presented below.

H7: Korean recreationists at Lake Chung-pyung are more likely to choose rationalization as their coping strategy than American recreationists at Lake Granbury.

To test this, I conducted an independent t-test for rationalization by country of origin. And the analysis supported the hypothesis. To compare their independence, a sum score of two coping items (coping_h and coping_k, see Table 3 for items)

measuring rationalization was created. The independent-samples t-test was conducted to compare whether Korean respondents were more likely to choose rationalization as their coping strategy compared to American respondents. The analysis indicated that there was a significant difference with regard to rationalization for Americans (M=4.42, SD=1.65) and Koreans (M=5.00, SD=1.85) (t=-3.66, p<.001) with Koreans more likely to rationalize the situation encountered (see Table 21).

TABLE 21 Independent Samples T-test of Rationalization by Country

	N	Mean	SD	*t*	Sig.
Americans	178	4.42	1.65	-3.66	<.001
Koreans	442	5.00	1.85		

4.3. American Respondents

4.3.1. Socio-Demographic Profile of American Respondents at Lake Granbury

Table 22 presents the socio-demographic information of the American respondents. The average age of the respondents was 59.5. The majority of the respondents were male (81.1%). Among them 27.0% of respondents had some college and 28.1% graduated from college. Respondents showed a relatively high level of education (24.2% of the respondents had a master's, doctoral or professional degree). Almost half of the respondents (52.5%) were employed full time and 26.3% of them were retired, not working. The majority of the respondents were of non-Hispanic, Latino, or Spanish origin (96.5%) and white (98.8%). Respondents indicated that their

household income before taxes was $100,000 - $149,999 (22.2%), $150,000 - $199.999 (10.8%), and $300,000 or more (13.8%).

TABLE 22 Socio-demographic Characteristics of American Respondents

Demographic characteristics	n (%)
Age	
M(SD)	59.5 (9.5)
Gender	
Male	146 (81.1%)
Female	34(18.9%)
Education	
8th grade or less	1 (.6%)
9th to 11th grade	1 (.6%)
12th grade (high school graduate)	16 (9.0%)
13-15 years (some college)	48 (27.0%)
16 years (college graduate)	50 (28.1%)
17+ years (some graduate work)	19 (10.7%)
Master, doctoral, or professional degree	43 (24.2%)
Employment	
Employed, full time	94 (52.5%)
Employed, part time	2 (1.1%)
Retired, but working full time	10 (5.6%)
Retired, but working part time	19 (10.6%)
Retired, not working	47 (26.3%)
Homemaker	3 (1.7%)
Unemployed	2 (1.1%)
Other (specify)	2 (1.1%)
Ethnicity	
Not of Hispanic, Latino, or Spanish origin	173 (96.5%)
Mexican, Mexican American, Chicano	2 (1.1%)
Other origin	4 (2.2%)

Table 22 continued

Race	
White	170 (98.8%)
American Indian or Alaska Native	1 (.6%)
Some other race	1 (.6%)
Household income before taxes	
$25,000 - $49,999	13 (7.8%)
$50,000 - $74,999	28 (16.8%)
$75,000 - $99,999	28 (16.8%)
$100,000 - $149,999	37 (22.2%)
$150,000 - $199,999	18 (10.8%)
$200,000 - $249,999	16 (9.6%)
$250,000 - $299,999	4 (2.4%)
$300,000 or more	23 (13.8%)

According to the Special Report on Fishing and Boating (Recreational Boating and Fishing Foundation & The Outdoor Foundation, 2011), 7% of Americans over the age of six owned a boat (29.9 million boat owners) in 2010. The report showed demographic information of boat owners (Table 23). Regarding gender, 52.1% were males and 47.9% were females. Almost half of them were middle age or older, 45 to 64 (23.8%) and 35 to 44 (23.2%). Among the boat owners, 33.0% of them earned more than $100,000 per year. Although the dominant age was between 35 and 64 for American people who own a boat, the average age (59.5%) was higher for recreationists at Lake Granbury. At Lake Granbury, there were many more males (81.1%) than females (18.9%). However, the boat ownership rate showed that the gender ratio for boat

ownership in America was pretty even (52.1% male and 47.9% female). In terms of household income, the sample in our study showed that 33% of the respondents earned more than $100,000 per year. The demographics of boat ownership in America showed that almost 58% of the people who own a boat earned more than $100,000.

TABLE 23 Boat Ownership Rate by Demographics

Demographic characteristics	%
Age	
6-15	19.7%
16-34	17.9%
35-44	23.2%
45-64	23.8%
Over 65	15.4%
Gender	
Male	52.1%
Female	47.9%
Household income	
Under $50,000	17.5%
$50,000 - $74,999	24.4%
$75,000 - $99,999	25.1%
More than $100,000	33.0%

(Recreational Boating and Fishing Foundation & The Outdoor Foundation, 2011)

4.3.2. Hypotheses Testing

Before analyzing the data, missing values were treated using multiple imputation to avoid biased parameter estimates (Sinharay, Stern, & Russell, 2001). Also, to minimize the number of items for each variable, the items presented to respondents were

randomized. For example, there were 25 items to measure leisure activity involvement. But these were randomized in the online survey system to present only 10 items for each respondent. This randomization was used for the measurement of stress level (10 items were presented from a total of 25 items), coping (10 items were presented from a total of 20 items), place attachment (10 items were presented from a total of 17 items), leisure activity involvement (10 items were presented from a total of 25 items), and self-construal (6 items were presented from a total of 12 items). Among the various approaches in dealing with missing data (e.g., single imputation methods, model-based imputation methods, etc.), I chose to use the multiple imputation method to treat missing values. There are several advantages for using multiple imputation: maintaining the original variability of missing data and yielding unbiased parameter estimates (Allison, 2001). Moreover, this method produces reliable results when the sample size is small or many missing observations exist in the data set. Thus, I employed multiple imputation using PRELIS to replace missing values caused by the randomization of the scales. Using the American sample (n=186), I conducted a CFA using LISRLEL 8.70 for the coping dimensions. The number of cases, 186, is after implementing multiple imputation. Originally, there were 20 items for six dimensions of coping (absolute displacement, temporal/activity/resource substitution, rationalization, and product shift). The factor solution with these original 20 items did not show a good fit of the data for the model (χ^2=1810.53, df=149, RMSEA=.19, NNFI=.39, CFI=.52). Therefore, because of the failure to validate the hypothesized measurement model, all subsequent hypotheses were rejected for the American respondents.

4.3.3. Exploratory Factor Analysis of Coping for the American Group

As a result of the misfit for the measurement and structural model for American respondents, I needed to first reinvestigate the factor structure for coping. I suspected the possibility of different factor solutions for coping. The six dimension factor solution for coping was supported by extensive coping literature (Miller & McCool, 2003). However, the CFA for the American group did not support the previous six-dimensional solution of coping items. Therefore, I conducted an exploratory factor analysis (EFA) using SPSS 16.0 to find a better factor solution for the coping items (see Table 24). A total of 20 coping items were factor-analyzed, using the Maximum Likelihood extraction method, with an orthogonal VARIMAX rotation to identify the underlying dimensions. This was employed to reduce the data to a smaller set of dimensions or factors that explain most of the variance among the attributes of coping. In EFA, the derivation of factors is normally based on the factor loadings, eigenvalues, and the percentage of variance explained (Hair, et al, 1998). Specifically, extracted factors would have (a) factor loadings equal to or greater than .60 and (b) factors with an eigenvalue equal to or greater than 1. Finally, extracted factors should explain at least 60% of the total variance. For reliability, the value of Cronbach's Alpha was calculated to test the stability of variables retained in each factor, and only those variables having coefficients greater than or equal to .70 were considered acceptable and a good indication of construct reliability (Nunnally, 1978).

The results suggested a four-factor solution, including 12 items, and explained 68.8% of the variance of coping (χ^2=147.13, df=24, p<.001). Table 24 shows the results

of the EFA. The results of the factor analysis produced a clean factor structure with relatively higher factor loadings on the four extracted dimensions of coping. The first factor extracted was identified as “Direct Action.” There were three items related to complaining to others about the stressful situations. In accordance with the original coping dimension, these items belong to the direct action dimension of coping. This factor explained 29.17% of the total variance. Factor loadings ranged from .63 to .77. Cronbach’s alpha coefficient for this factor with three items was .72. The second extracted factor was “Disengagement.” Three items loaded on this factor and described disengagement from recreational boating and the lake because of a stressful condition. Originally, one item (coping_r) was one of the “activity substitution” coping dimensions and the other two items (coping_a and coping_j) belonged to the absolute displacement dimension of coping. However, I found that all three items described absolute disengagement from the boating activity or the lake itself because of the stressors. Thus, this dimension is identified as “disengagement.” Factor loadings were from .65 to .98. This factor explained 16.95% of the total variance and Cronbach’s alpha was .71. The third factor extracted by the EFA was “Temporal Substitution.” The two items were related to changing the timing of visits to the lake because of the stressors on the lake. These two items originally belonged to the same dimension of coping, temporal substitution. Factor loadings were .75 and .96. This factor explained 14.23% of the total variance and Cronbach’s alpha was .87. The fourth factor was “rationalization.” The original scale contained two types of cognitive coping (rationalization and product shift). However, this analysis indicated that three of the cognitive coping items belong to one

factor, suggesting a reliable alpha coefficient (α =.65) and explaining 9.80% of the total variance. Factor loadings for the three items of rationalization were from .61 to .66.

TABLE 24 Exploratory Factor Analysis of Coping Items for American Respondents

Factors extracted	Factor loading	Eigen-value	% of variance	Commu-nalities
Factor 1–"Direct Action"(α =.72)		3.50	29.17%	
(i) Decided to talk to someone who could do something about the condition/situation	.78			.62
(g) Decided to talk with lake management staff about the condition/situation	.70			.55
(d) Talked with other members of your group about the condition/situation	.63			.55
Factor 2–"Disengagement"(α =.71)		2.03	16.95%	
(r) Decided that boating is no longer important to you because of this condition/situation	.98			.99
(a) Decided to never visit this lake area again because of this condition/situation	.77			.65
(j) Decided to never boat again because of the stressful situation(s)	.65			.64
Factor 3–"*Temporal Substitution*" (α =.87)		1.55	12.88%	
(l) Decided that, if you visit in this area in the future, visiting at a different season would help avoid this condition/situation	.96			.67
(e) Decided that, if you visit this area in the future, visiting at a different time of day would help avoid this condition/situation	.75			.99
Factor 4 –"Rationalization"(α =.65)		1.18	9.80%	
(n) Saw the stressful situation(s) as a positive chance to grow personally	.66			.58
(k) Told myself the stressful situation(s) was actually a symptom of some larger problem	.61			.59
(h) Told myself that there was nothing I can do about the stressful situation(s), so I just enjoyed the experience for what it was	.64			.59
Total variance explained			68.80%	

4.3.4. Confirmatory Factor Analysis of Coping for the American Group

Based on the items and dimensions extracted by the EFA, I conducted a CFA using LISREL to identify the hypothesized factor structure of coping for American respondents (n=186 (see Table 25). Two of the coping items (i.e., coping_j and coping_g in Table 3) were removed because of low factor loadings and cross-loadings across the dimensions. The final CFA model confirmed the structure of four dimensions of coping: 1) direct action, 2) disengagement, 3) temporal substitution, and 4) rationalization. The model showed a satisfactory fit for the data (χ^2=57.14, df=22, RMSEA=.09, NNFI=.91, CFI=.95). As shown in Table 25, the Cronbach's alpha coefficients ranged from .60 to .88 (.60 for direct action, .88 for disengagement, .87 for temporal substitution, and .65 for rationalization, respectively). A Cronbach's alpha coefficient over .70 is considered as reliable (Nunnally & Bernstein, 1994). Although disengagement and temporal substitution showed an acceptable reliability, the coefficients for direct action and rationalization were .60 and .65, respectively. Given that the constructs had a small number of indicators (two to three), this can be considered as reliable (Cortina, 1993). The composite reliability of the coping scale was checked for all of the dimensions (.72 for direct action, .91 for disengagement, .89 for temporal substitution, .67 for rationalization). For composite reliability, a coefficient over .60 is considered as reliable (Bagozzi& Kimmel, 1995; Bagozzi & Yi, 1988), thus all factors were deemed reliable.

TABLE 25 Confirmatory Factor Analysis of Coping for American Respondents

	M	SD	Factor Loadings	*t*-value	α	Composite Reliability
Direct Action					.60	.72
(i) Decided to talk to someone who could do something about the condition/situation	1.60	.89	.64	6.90		
(d) Talked with other members of your group about the condition/situation	1.89	1.13	.78	9.02		
Disengagement					.88	.91
(r) Decided that boating is no longer important to me because of the stressful situation(s)	1.20	.59	.99	17.27		
(a) Decided to never visit this lake area again because of this condition/situation	1.27	.78	.81	17.27		
Temporal Substitution					.87	.89
(l) Decided that, if you visit this area in the future, visiting at a different time of day would help avoid this condition/situation	2.35	1.32	.83	17.16		
(e) Decided that, if you visit this area in the future, visiting at a different time of day would help avoid this condition/situation	2.07	1.21	.95	17.16		
Rationalization					.65	.67
(n) Saw the stressful situation(s) as a positive chance to grow personally	1.59	.92	.62	5.52		
(k) Told myself the stressful situation(s) was actually a symptom of some larger problem	1.71	.99	.64	5.74		
(h) Told myself that there was nothing I could do about the stressful situation(s), so I just enjoyed the experience for what it was	2.72	1.19	.61	6.58		

4.3.5. New Hypotheses for the American Group

After conducting the CFA for the American group, I identified new coping dimensions: direct action, disengagement, temporal substitution, and rationalization. Therefore, I hypothesized new relationships among stress, appraisal, and coping for American recreationists at Lake Granbury, Texas.

The coping scale used in this study contains seven dimensions of coping: absolute displacement, temporal substitution, activity substitution, resource substitution, direct action, rationalization, and product shift. Three of the identified dimensions (direct action, temporal substitution, and rationalization) were identical with the dimensions in previous coping research (e.g., Miller & McCool, 2003). The other four dimensions (absolute displacement, activity substitution, resource substitution, direct action, and product shift) were not extracted by the analysis. Instead, a new coping dimension was identified as "disengagement." It refers to the disengagement from a recreational activity and/or resource to avoid a stressful situation. It is a combination of items from absolute displacement and activity substitution from the modified coping checklist (see Table 3).

First, I hypothesized a negative relationship between stress and appraisal (H8-1). This is based on research finding that recreationists with high level of stress negatively appraised the stressful situation (Bouchard, et al., 2004; Budruk, et al., 2008; Miller & McCool, 2003).

Regarding the relationship between appraisal and behavioral coping, I hypothesized a positive relationship between appraisal and direct action (H8-2), disengagement (H8-3), and temporal substitution (H8-4). People who think they have the

ability to overcome the stressful situation (positive appraisal) are more likely to engage in behavioral coping strategies. They tended to complain about the undesirable situation (direct action) (Miller & McCool, 2003), change the time/season of their recreational activity (temporal substitution) (Shelby &Vaske, 1991), be displaced from the setting because of stressors (absolute displacement) (Brunson & Shelby, 1993), or discontinue the preferred recreational activity (activity substitution) (Shelby &Vaske, 1991). As stated earlier, the last behavioral coping dimension for the American group was "disengagement," which includes items related to activity substitution and displacement from the original scale. Although they were drawn from different dimensions of coping from previous research, the items are about disengagement from a preferred recreation activity and resource.

Alternately, I hypothesized a negative relationship between appraisal and rationalization (H8-5). If recreationists view the stressors as controllable, they will be less likely to rationalize the situation. Instead, if they conclude that they can overcome the situation, they will behave to change the situation. People who showed a low level of stress tended to rationalize the stressful situation (Miller & McCool, 2003), and the negative relationship between appraisal and cognitive coping has been supported in previous studies (Smith & Palmquist, 1994; Manning, 1999).

Thus, based on previous literature of coping behavior, new hypotheses were tested for American recreationists at Lake Granbury, Texas (see Figure 11).

H8. There is a structural relationship among stress, appraisal, and coping for American recreationists.

H8-1. American recreationists who negatively appraise the stressful situation are more likely to display higher levels of stress.

H8-2. American recreationists who positively appraise the stressful situation will be more likely to engage in direct action.

H8-3. American recreationists who positively appraise the stressful situation will be more likely to engage in disengagement.

H8-4. American recreationists who positively appraise the stressful situation will be more likely to engage in temporal substitution.

H8-5. American recreationists who positively appraise the stressful situation will be less likely to engage in rationalization.

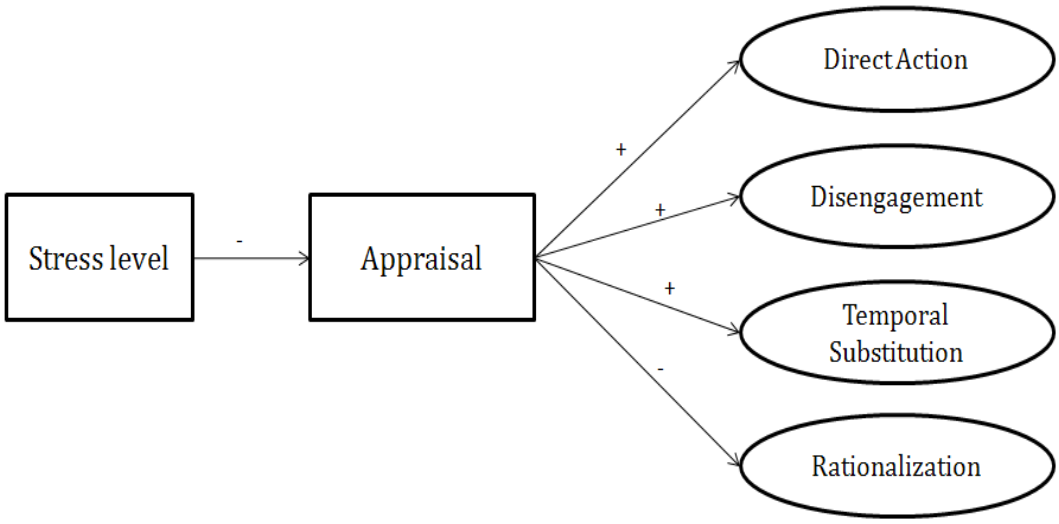


FIGURE 11 New hypothesized model for American recreationists.

4.3.6. Results of the New Hypothesized Model for the American Group

I tested the measurement and structural components of the hypothesized relationship among stress, appraisal, and four coping dimensions. As shown in Table 26, both the measurement (χ^2=82.09, df=39, RMSEA=.07, NNFI=.91, CFI=.94) and the structural model (χ^2=71.66, df=36, RMSEA=.07, NNFI=.92, CFI=.95) showed good fit for the data.

In addition, I conducted a power analysis, suggested by MacCallum, et al. (1996), for the final model (H3a). Power means the probability of rejecting the null hypothesis of close fit where $\varepsilon \leq .05$. With df=36 and n=186, the power of our structural model was shown to be strong (π=0.93) (Cohen, 2003). Therefore, this structural model had only a seven percent probability of a type II error where a hypothesis is judged as true when it is actually false.

TABLE 26 Summary of Model Testing Procedures for American Respondents

Model	χ^2	df	RMSEA	NNFI	CFI
Measurement model	82.09	39	.07	.91	.94
Structural model	71.66	36	.07	.92	.95

Specifically, H8, which described the structural relationship among stress, appraisal, and coping, was not supported by the analysis. Appraisal did not mediate the relationship between stress and the four coping dimensions. Thus, H8-1 (a negative

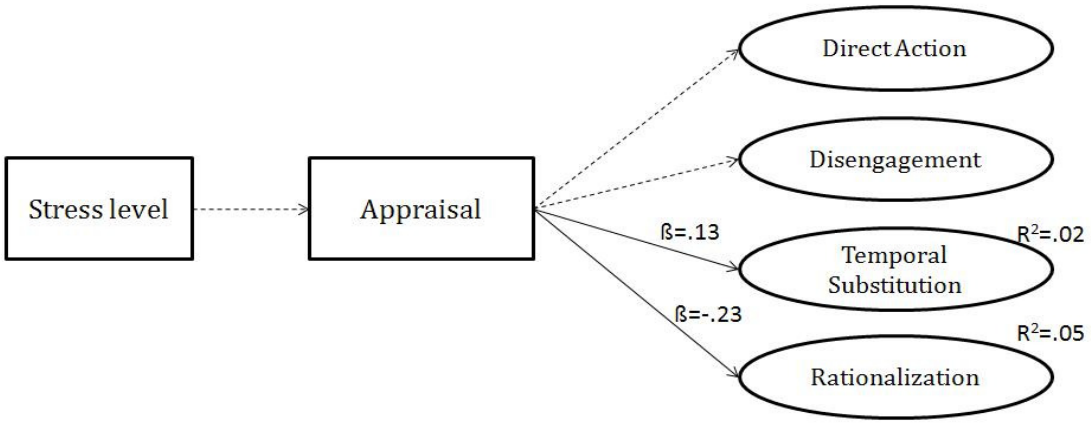
relationship between stress level and appraisal) was also rejected. There was no significant (p >.05) relationship between the level of stress and appraisal of the stressors for American recreationists (see Figure 12).

For H8-2, I hypothesized a positive relationship between appraisal and direct action. This was not supported by the analysis. There was no significant (p >.05) relationship between the two variables.

For H8-3, I proposed a positive relationship between appraisal and disengagement. This was rejected. I found no significant (p >.05) relationship between appraisal and disengagement from the boating activity or lake for American respondents at Lake Granbury.

For H8-4, I proposed a positive relationship between appraisal and temporal substitution. This was supported by the analysis. There was a positive relationship between appraisal and temporal substitution (β=.13, t=2.07, p < .05). That is, American respondents at Lake Granbury who positively appraise the stressful conditions on the lake were more likely to change the timing of their boating activity.

For H8-5, I hypothesized a negative relationship between appraisal and rationalization. This hypothesis was supported by the analysis. There was a negative relationship between appraisal and rationalization (β=-.23, t=2.66, p < .01). American respondents who positively appraised the stressful situation were less likely to engage in rationalization (e.g., trying to enjoy their boating activity regardless of stressors).



Note: Dashed line indicates a path that was not significant at .05

FIGURE 12 The relationships among stress, appraisal, and new coping dimensions for American respondents.

4.3.7. The Moderating Effect of Place Attachment on the Relationships among Stress, Appraisal, and Coping for American Respondents

To test the moderating effect of place attachment, leisure activity involvement, and self-construal (i.e., self-independence), I conducted invariance testing for American respondents. However, because of the relatively small sample size for group comparison (186 for all American respondents), I was unable to test the invariance of the full latent variable model. Thus, I parceled all of the latent constructs, within the American sample alone, and ran manifest regression models. The use of item parcels instead of the individual items alone is beneficial for the improvement of the ratio of sample size to the

number of variables, especially when dealing with a large number of measured variables or estimated parameters (e.g., Hall, Snell, & Foust, 1999; Marsh, Hau, Balla, & Grayson, 1998). A parcel is an observed variable, which is a summation of conceptually similar or psychometrically unidimensional items. For example, in the following analysis, direct action was the sum of two items (coping_i and coping_d). Below are the results for the American sample as well as for the groups divided by the median score of summed place attachment, leisure activity involvement, and self-independence. That is, groups (high and low) were created by splitting the sample around the medians of these variables. Moderating effects of place attachment, activity involvement, and self-independence were then examined by testing for differences within the structural parameters within our hypothesized model.

With regard to the comparison of high place attached and low placed attached respondents, these findings indicated that the hypothesized model fits the data well for both groups (high place attached American respondents: χ^2=4.43, df=4, RMSEA=.03, NNFI=.98, CFI=.99; low place attached American respondents: χ^2=3.48, df=4, RMSEA=.00, NNFI=1.02, CFI=1.00) (see Table 27). Invariance testing was used to examine whether the hypothesized relationships varied and whether the beta weights were significantly different between these two place attachment groups. Beta coefficients were first constrained to be invariant (i.e., equal) across the two groups. The results indicated that the imposition of this constraint did not significantly affect model fit ($\Delta\chi^2$=6.72, Δdf=5, p >.05). Thus, I can conclude that the degree to which respondents

were attached to the lake did not influence any of the linear relationships among the variables within my model (see Table 28).

TABLE 27 Model Testing Procedures for the American Group (Manifest Regression)

	χ^2	df	RMSEA	NNFI	CFI
American group (n=186)	6.56 (*p*=.16)	4	.06	.94	.98
High Place Attached Americans (n=86)	4.43 (*p*=.35)	4	.03	.98	.99
Low Place Attached Americans (n=99)	3.48 (*p*=.48)	4	0.0	1.02	1.00

TABLE 28 Summary of the Invariance Tests for American Respondents (Moderator: Place Attachment)

Model	χ^2	df	$\Delta\chi^2$	Δdf	RMSEA	NNFI	CFI
Multigroup Structural Model	7.95 (*p*=.44)	8			0.0	1.00	1.00
Invariant regression coefficients	14.67 (*p*=.33)	13	6.72 [a]	5	.03	.98	.99

[a] No moderating effect of place attachment

4.3.8. The Moderating Effect of Leisure Activity Involvement on the Relationships among Stress, Appraisal, and Coping for American Respondents

The analysis showed that the hypothesized model fits the data well for both involvement groups (high involvement: χ^2=3.56, df=4, RMSEA=.00, NNFI=1.02, CFI=1.00; low involvement: χ^2=4.72, df=4, RMSEA=.04, NNFI=.96, CFI=.99) (see

Table 29). Also, the result of invariance testing (see Table 30) indicated that the imposition of this constraint did not significantly affect model fit ($\Delta\chi^2$=4.45, Δdf=5, p >.05). Thus, the degree of respondents' activity involvement showed no influence on the structural relationships tested in the hypothesized model.

TABLE 29 Summary of Model Testing Procedures for the Two Leisure Activity Involvement Groups (American respondents) (Manifest Regression)

	χ^2	df	RMSEA	NNFI	CFI
High Leisure Activity Involved Americans (n=86)	3.56 (p=.47)	4	.00	1.02	1.00
Low Leisure Activity Involved Americans (n=99)	4.72 (p=.32)	4	.04	.96	.99

TABLE 30 Summary of the Invariance Tests for American Respondents (Moderator: Leisure Activity Involvement)

Model	χ^2	df	$\Delta\chi^2$	Δdf	RMSEA	NNFI	CFI
Multigroup Structural Model	8.28 (p=.41)	8			.01	.99	.99
Invariant regression coefficients	12.73 (p=.47)	13	4.45 [a]	5	0.0	1.00	1.00

[a] No moderating effect of leisure activity involvement

4.3.9. The Moderating Effect of Self-construal on the Relationships among Stress, Appraisal, and Coping for American Respondents

The moderating effect of self-construal was examined for American groups in terms of the hypothesized relationship among stress, appraisal, and coping behavior. Both self-construal groups indicated an acceptable model fit (American respondents with a strong independent self-construal: χ^2=2.85, df=4, RMSEA=.00, NNFI=1.07, CFI=1.00; American respondents with a weak independent self-construal: χ^2=4.37, df=4, RMSEA=.03, NNFI=.99, CFI=.99) (see Table 31). I then tested whether the hypothesized relationships were different across the two groups divided by the summed score of self-independence. The results of the invariance testing indicated that the imposition of the invariant beta coefficients did not significantly affect model fit ($\Delta\chi^2$=3.10, Δdf=5, p >.05) (see Table 32). Therefore, there was no moderating effect of self-construal on the hypothesized relationship among stress, appraisal, and coping.

TABLE 31 Summary of Model Testing Procedures for the Two Self-independence Groups (American respondents) (Manifest Regression)

	χ^2	df	RMSEA	NNFI	CFI
Strong Self-independent Americans (n=79)	2.85 (p=.58)	4	0.0	1.07	1.00
Weak Self-independent Americans (n=102)	4.37 (p=.36)	4	.03	.99	.99

TABLE 32 Summary of the Invariance Tests for American Respondents (Moderator: Self-independency)

Model	χ^2	df	$\Delta\chi^2$	Δdf	RMSEA	NNFI	CFI
Multigroup Structural Model	7.22 (*p*=.51)	8			0.0	1.02	1.00
Invariant regression coefficients	10.32 (*p*=.67)	13	3.10 [a]	5	0.0	1.04	1.00

[a] No moderating effect of self-independence

Given that the invariance testing (moderating effect of place attachment, leisure activity involvement, and self-construal) showed no significant difference ($p>.05$) between the groups with regard to the relationships tested in the hypothesized model, the discussion of findings for American respondents was based on the analysis of the pooled sample of American respondents (new hypotheses 7-1 to 7-5) as reported earlier.

5. DISCUSSION

Recreational boating has been studied by many, but little research has focused on the evaluations of stressful situations encountered by individual boaters. In this regard, this study investigated the relationships among stress level, appraisal, and coping to determine whether a person's appraisal of a potentially stressful situation mediates the selection of specific coping strategies. Furthermore, the moderating effect of place attachment, leisure activity involvement, and self-construal on the hypothesized relationships was examined.

In my investigation, stress was conceptualized according to the definition of daily hassles (Kanner, et al., 1981). It is about the irritating, frustrating, distressing demands that to some degree characterize recreation activities in an environment. Although recreationists would like to enjoy their activity, sometimes they perceive potentially negative setting conditions at a recreational site. The items that were measured for potential stressors at a lake are structural (weather, insects, water quality, litter, facility conditions, etc.), social (number of people encountered, behavior of others), and intrapersonal (concerns about accidents, etc.) factors (see Table 1). If research of visitor satisfaction tells us why they are pleased, studying potentially stressful factors at a recreational site and recreationists' behaviors (coping strategy) in response to the undesirable conditions provide information on some negative aspects of the recreation experience. This chapter will discuss the relationships found through this

research using data collected from Lake Chung-pyung in South Korea and Lake Granbury, Texas.

5.1. The Relationships among Stress, Appraisal, and Coping for the Pooled Sample: Korean and American Respondents

As stated in the results, the analysis for the measurement model for the pooled sample (Korean and American respondents) did not show a good fit for the data. Thus, I could not test the structural relationships among stress, appraisal, and coping for the pooled sample. This resulted in rejecting hypotheses from H1-1 to H1-8 (see Figure 1 for hypotheses) for American respondents. Since the measurement model did not show a good fit, I could not test the moderating effect of place attachment, leisure activity involvement, and self-construal. This resulted in rejecting hypotheses from H2-1 to H4-8 for American respondents. Consequently, to identify the sources of the misfit, I independently tested hypotheses for the two groups: Korean and American respondents. First, all hypotheses were tested for the Korean sample. Regarding the moderating effect of self-construal, I divided Korean respondents into two groups around the median score of self-independence, one dimension of self-construals. Next, for the American group, I conducted an exploratory factor analysis of coping items to identify suitable solutions for them. Then new hypotheses were tested for American respondents with new coping dimensions identified for this specific group.

5.2. The Relationships among Stress, Appraisal, and Coping for Korean Respondents

For Korean respondents (Korean recreationists at Lake Chung-pyung), H1 was supported: there was a structural relationship among stress level, appraisal, and coping. The relationship between stress and coping was mediated by appraisal (how one evaluates the stressors).

5.2.1. Stress and Appraisal

H1-1 hypothesized a negative relationship between the level of stress and appraisal of the situation. That is, recreationists at Lake Chung-pyung with a high level of stress were more likely to appraise the situation negatively (e.g., "I could not overcome the stressful situation."). However, this hypothesis was not supported by the data. Instead, there was a positive relationship between stress and appraisal according to the analysis. That is, recreationists who perceived negative setting elements at the lake were more likely to appraise the situation in a positive way. Initially, this study hypothesized that a high level of stress would result in a negative appraisal of the stressors. This assumption was based on previous work of psychological distress indicating that people with high levels of stress are easily frustrated (Bennett, et al., 1998; Keenan & Newton, 1984; Parasuraman & Alutto, 1984). Since there has been little research to directly examine the relationship between stress and appraisal in recreation and leisure, I relied on stress research conducted by psychologists, which is mostly related to stress and negative psychological outcomes. For example, stress level was a significant predictor of negative symptoms such as feelings of psychological strain

(Keenan & Newton, 1984), frustration or irritation (Bennett, et al., 1998), or dissatisfaction about the work environment (Parasuraman & Alutto, 1984). Thus, it was assumed that stress would make recreationists feel frustrated about the situation and appraise it as uncontrollable because high levels of stress result in negative psychological outcomes. However, this hypothesized negative relationship between stress and appraisal was not supported by the data. The study results indicate that, in a recreational boating context, recreationists with high stress were more likely to appraise the situation positively (e.g., "Although I get very stressed, I feel like I can overcome this problematic situation."). This might be due to several reasons. First, some boaters at Lake Chung-pyung were already aware of the lake's conditions and they evaluated the stressors on the lake as controllable or solvable issues. The lake is busy during the summertime, and visitors may have expectations about its conditions. Although the conditions may be undesirable (e.g., crowded), if visitors expect possibly undesirable conditions, they may still evaluate it positively. Second, the sample is Korean recreationists. In a previous study of coping behavior in different cultural contexts, it has been noted that East Asians, who have strong interdependent self-construals, are more likely to appraise the conditions on the lake positively to avoid conflict with others (Chun, et al., 2006; Morling & Fiske, 1999). The analysis (testing hypothesis 8, see Table 23) indicated that Korean recreationists at Lake Chung-pyung were more likely to choose rationalization as their coping strategy compared to American recreationists at Lake Granbury. These two reasons can provide partial support as to why Korean respondents positively appraised the stressful situations at Lake Chung-pyung.

5.2.2. Appraisal and Behavioral Coping

H1-2, H1-3, H1-4, H1-5, and H1-6 proposed a positive relationship between appraisal and behavioral coping (i.e., absolute displacement, temporal substitution, activity substitution, resource substitution, and direct action, respectively). These were all supported by the results. Korean recreational boaters on Lake Chung-pyung who appraised the stressful situation positively (e.g., "I can solve this problem.") were more likely to engage in behavioral coping. For example, they avoided the stressors by leaving the lake, by changing the time for their boating activity, changing their activity, changing the location of their boating, or by complaining about the situation to the service provider or friends. This corresponds with the findings of previous coping research. If people perceive the stressful situation as controllable, the likelihood of engaging in substitution behavior increases (Schuster et al., 2003, 2006). Appraisal is the process of categorizing a stressful situation and making a judgment about how to react to the stressors. Thus, how one evaluates the situation would be reflected by the choice of coping behavior in the stressful context. In this study, a positive evaluation of the stressful condition resulted in behavioral coping. Coping theories and empirical studies have investigated the relationship between stress and coping (Lazarus and Folkman, 1984; Miller & McCool, 2003), and found that a high level of stress resulted in the selection of direct or behavioral coping strategies (e.g., substitution of time, place, etc.). The results of this study supported this finding.

5.2.3. Appraisal and Cognitive Coping

H1-7 and H1-8 proposed a negative relationship between appraisal and cognitive coping (rationalization and product shift, respectively). However, these hypotheses were rejected by analysis. There was a positive relationship between appraisal and rationalization indicating that boaters who appraised the situation positively were more likely to rationalize the stressful situation. This was contrary to the findings in existing coping literature (e.g. a negative relationship between appraisal and cognitive coping). However, considering the characteristics of the sample (Koreans) this can also be understood as a cultural orientation. Since East Asians tend to have an interdependent self-construal (Markus & Kitayama, 1991), which emphasizes harmony with others and avoiding conflict, previous coping research in different cultural contexts indicate that people from an Asian background tend to engage in cognitive coping, such as rationalization, to minimize the stress level (Yeh, et al., 2006). Cultural orientation or the type of self-construal influences a person's selection of coping behavior (e.g., Cross, 1995; Lam & Zane, 2004). For instance, Cross (1995) found that people with a strong interdependent self-construal were more likely to engage in cognitive coping compared to individuals with an independent self-construal. Similarly, Lam and Zane (2004) also noted that Asian Americans who had a more interdependent self-construal were more inclined to engage in cognitive coping such as rationalization compared to Americans of European descent.

With regard to the relationship between appraisal and product shift (H1-8), there was no significant (p>.05) relationship for Korean respondents. Product shift refers to

changing the definition of a recreational activity to adjust to the current situation. For example, if a person perceives the lake to be crowded, the person redefines his/her expectations about the experience (e.g., “The crowded conditions are to be expected.”). The appraisal process was not affected by the re-definition of the recreational site in this study.

5.3. The Moderating Effect of Place Attachment for Korean Respondents

In this investigation, it was hypothesized that place attachment would moderate the relationships between stress, appraisal, and coping for Korean recreationists on Lake Chun-pyung. Specifically, I compared the equality of parameters within the measurement and structural models across the two place attachment groups: Korean respondents with high place attachment versus those with low place attachment. The results indicated that the hypothesized paths were different across the two place attachment groups. There was no difference between the two groups in terms of factor structure, factor loadings, and variance/covariance. That is, the relationship of stress-appraisal-coping should be understood differently for boaters who have a high attachment to the lake as opposed to those with a low attachment.

First, stress level had a positive influence on the appraisal of the situation for the high place attachment group. However, for the low place attachment group, there was no relationship between the two variables. Similar to the pooled sample, boaters with a high attachment to Lake Chung-pyung were more likely to evaluate the situation positively—even under a high stress level. Place attachment researchers indicate that the degree of

attachment to a recreational place is an important determinant of how a person evaluates the setting's conditions (Kyle, et al., 2004). Contrary to these findings, this study found that boaters with a high attachment to the lake were likely to positively appraise the situation. People with a high place attachment to the lake were more likely to be frequent visitors and know the site conditions well. Previously, research has shown that place attachment is significantly associated with experience use history, which refers to the intensity and frequency of previous visits to a recreational setting (Moore & Graefe, 1994; Bricker & Kerstetter, 2000). For example, Moore and Graefe (1994) found that place identity was best predicted by how long visitors had been coming to the site. Thus, boaters with a high attachment to the lake may have a better understanding of alternatives for avoiding stressful conditions because of their knowledge of the site. The more they frequented the site, the more knowledge of the site they accrued as well as the solutions available to them to avoid undesirable conditions. This may underlie their positive evaluations (e.g., "I can overcome this situation.") of stressful lake surroundings. Although some place research have found that people with a high place attachment tended to be sensitive and critical about the setting conditions (e.g., crowding), recreationists with a functional attachment were less sensitive to the setting conditions compared to those with an emotional attachment to the place (Kyle, et al., 2004; Vorkinn & Riese, 2001; Young, et al., 1991). This partially supports the results: stress level positively influences one's evaluation of stressful setting conditions for the high place attachment group. If the respondents have a more functional attachment to the site, it is expected that people with a high attachment to a recreational setting will be less

sensitive, and evaluate the stressful environment as controllable. For recreational boaters with a low attachment, their stress level did not have any impact on the evaluation of the site. Their stress and coping relationship was not mediated by appraisal.

The difference between the two place attachment groups in terms of hypothesized paths was also found in the relationship between appraisal and behavioral coping (i.e., displacement, temporal/activity/resource substitution, and direct action). For recreational boaters with a high place attachment, when they positively appraised the stressful boating condition, they were likely to change the time of their boating (temporal substitution), substitute the activity with other activities (activity substitution), visit other locations on the lake (resource substitution), or complain about the stressors (direct action). They engaged in diverse types of behavioral coping with the exception of displacement. When people with high place attachment to a recreational setting perceive something as undesirable, they are more likely to attempt to change the situation (Budruk, et al., 2008; Schuster, Hammitt, & Moore, 2006). Recreationists have substituted their preference when they encounter undesirable situations in a recreational context. Previous research about substitution behavior indicates recreationists changed time (McCool & Utter, 1982), one recreation activity to another (Vaske & Donnelly, 1982), or a recreation setting (Manfredo & Anderson, 1987; Vaske & Donnelly, 1982) to cope with a stressful situation. I expected that visitors with high place attachment would be less likely to engage in resource substitution. However, the items related to "resource substitution" are about changing the location of boating within the lake; i.e., intra-site substitution behavior. The items did not address substituting one lake for another lake

because of the stressors. Thus, boaters with a high attachment indicated they would like to change the location of their boating within Lake Chung-pyung. Further, there was no significant relationship between appraisal and displacement. Anderson and Brown (1984) found that recreationists with high attachment to the site were less likely to consider displacement as their coping option. Since they are attached to the lake, they were less likely to be displaced from the lake because of the stressors. In sum, the positive relationship between stress level and behavioral coping for boaters with a high place attachment was consistent with previous place and coping research.

Alternately, boaters with low place attachment were more likely to be displaced from the lake (absolute displacement), change the activity itself (activity substitution), or complain about the situation to others (direct action). This is consistent with previous findings from place attachment research. Among behavioral coping dimensions, displacement from the recreational site is an important indicator of how one perceives setting conditions. Visitors with a low tolerance for crowding or other negative setting elements were likely to choose displacement as their coping option (Anderson & Brown, 1984; Hammitt & Patterson, 1991). When conditions were perceived to be undesirable, recreationists with low place attachment wanted to avoid the situation completely by choosing another site.

The two groups have different expectations, knowledge, and abilities to cope with potential stressors. Although activity substitution and direct action are the coping options for both groups, the strength of the relationships (appraisal-activity substitution and appraisal-direct action) was stronger for the group with low place attachment. That

is, boaters with a low attachment to the lake were much more likely to change the activity and/or complain about the stressors compared to the high place attachment group. Boaters with a low attachment to the lake did not consider temporal substitution or resource substitution as coping options. Changing the time or the location of boating within the lake may require knowledge about the lake. However, boaters who have a low attachment to the lake may have little information about the lake conditions or settings, and probably are less likely to know which times are better or which locations on the lake are best.

With regard to the relationship between appraisal and cognitive coping (i.e., rationalization and product shift), there was a positive relationship between appraisal and rationalization for both groups. However, the strength of the path was stronger for the low place attachment group. That is, boaters who have a low attachment to Lake Chung-pyung were much more likely to rationalize stressful situations. Cognitive coping was an important mechanism that could reduce the amount of stress that recreationists perceive. Further, Manning and Valliere (2001) noted that the use of cognitive coping (e.g., rationalization) helped recreationists to maintain their level of satisfaction even under stressful situations. Thus, boaters on lake Chung-pyung, regardless of their degree of attachment to the lake, all tended to consider rationalization as a coping option. Similar to the pooled sample, there was no relationship between appraisal and product shift. How one evaluates the stressors did not have any impact on the definition of the recreational experience.

5.4. The Moderating Effect of Leisure Activity Involvement for Korean Respondents

The degree of involvement with a particular recreation activity influenced the stress-appraisal-coping relationship. That is, a person's involvement with a recreation activity could shape this relationship and finally, the preferred coping strategies. Recreational boaters with high leisure activity involvement employed an array of coping strategies (displacement, temporal/resource substitution, direct action, and rationalization) compared to boaters with low activity involvement (temporal/resource substitution, direct action, and rationalization). For both groups, temporal/resource substitution, direct action, and rationalization were considered coping strategies. However, the results of invariance testing, moderated by leisure activity involvement (i.e., high and involvement groups), indicated that the strength of the relationship was different across the groups.

For both groups, their stress level was positively influenced by their appraisal of potential stressors at Lake Chung-pyung. Respondents were more likely to evaluate the situation as controllable even under undesirable boating situations (e.g., crowding, noise, etc.).

For recreational boaters with high leisure activity involvement, there was a positive relationship between appraisal and behavioral coping (i.e., absolute displacement, temporal substitution, activity substitution, resource substitution, and direct action). The strongest relationship was observed between appraisal and resource substitution. That is, recreational boaters who were involved in their preferred boating activity were most likely to change the location of their boating to avoid stressful

conditions. This supports previous findings indicating recreationists with high leisure activity involvement were more likely to choose resource substitution as their coping behavior (Ditton & Sutton, 2004). Changing the location or timing of their activity engagement would likely be a better option for them in that other recreation activities are less likely to provide the same level of enjoyment or satisfaction they receive from their preferred activity (Vaske, et al., 1983). The second strongest relationship was between appraisal and direct action. Recreational boaters with high leisure activity involvement were more likely to complain about the stressful situation to service providers or other members of the group. This form of coping is similar to cognitive coping in that it does not require substituting the activity or place to avoid the situation. However, direct action is frequently associated with greater energy consumption because the behavior is directed toward changing the negative setting elements (e.g., letter writing, complaints to authorities). Thus, boaters with a high involvement with boating activities were more willing to engage in direct action to improve the boating environment. Other coping behaviors influenced by one's appraisal for this high leisure involvement group were activity substitution, absolute displacement, temporal substitution, and rationalization. Changing activity was not expected to be one of their coping options. These respodents enjoy a diverse boating-related activity such as water-skiing, wake boarding, jet-skiing, etc. Since they have a variety of options provided by boating companies around the lake, they can rent or choose to enjoy different boating activities if stressful situations arise. For other selected coping behaviors, changing times and rationalizing the stressful

situation, the relationships between appraisal and these coping behaviors were much stronger for the low leisure activity involvement group.

Recreational boaters with low leisure activity involvement were more inclined to consider temporal substitution, resource substitution, direct action, and rationalization. Most often, they indicated a preference for changing the time of their boating activity to avoid stressors on Lake Chung-pyung. Temporal substitution used to be known as the preferred coping option for those with low attachment to a recreational site (Vaske & Donnelly, 1982). Also, temporal substitution has been known as a coping method for those experiencing moderate levels of stress (Miller & McCool, 2003). If recreationists with low place attachment perceived the stressors as a moderate problem, they were more likely to use temporal substitution to manage the stressor.

For both involvement groups, rationalization was positively influenced by one's evaluation of the stressors on the lake. However, the strength of the relationship was stronger for the low involvement group. Even if boaters thought that they could control the situation, they were more likely to rationalize the situation. This may be because of the characteristics of the sample. As noted earlier (Hypothesis 8, see Table 23), Korean recreationists with high interdependent self-construals were more likely to engage in cognitive coping (e.g., rationalization) to avoid stressors or any other conflicts between group members. Korean boaters had a more interdependent self-construal compared to American boaters on Lake Granbury.

In sum, when recreational boaters perceived the stressful situation as controllable, boaters with high activity involvement were more likely to change the location of their

boating because of the stressful situation on the lake. However, boaters with a low activity involvement were more likely to consider changing the time of their boating to cope with the stressful situation on the lake.

5.5. The Moderating Effect of Self-construal for Korean Respondents

The type of self-construal (interdependent or independent) moderated the relationship of stress-appraisal-coping. Self-construal refers to the way people think, feel, and behave in relation to others (Markus & Kitayama, 1991). Psychologists have indicated that the type of self-construal, whether independent or interdependent, influence cognitions, emotions, motivations, and behaviors of individuals (e.g., Kuhnen & Oyserman, 2002; Lee, Aaker, & Gardner, 2000). Individuals' self-orientation toward an environment affects the action they would like to take in response to outside stimuli. Coping researchers (Segall et al., 1998; Leong & Wong, 2003) emphasized the importance of considering the type of self-construal in coping behavior. Previous research in cultural psychology found that East Asians are known as people with a strong interdependent self-construal and European Americans tended to have a strong independent self-construal. Because of the bad fit of the hypothesized model, I could not combine the two groups of respondents, Korean and American. The measurement model showed a misfit with this pooled sample. Thus, I first tested whether a type of self-construal (independent or interdependent) differentiates the hypothesized relationships among stress, appraisal, and coping behavior for Korean recreationists. For American respondents, I conducted an EFA to identify coping dimensions for them and test new

hypotheses (H8-1 to H8-5). This will be discussed later. To test this effect, I divided the Korean respondents into two groups around the median score of self-independency, one of the self-construal dimensions: respondents with strong independence and those with weak independence. Results indicated that there is a difference between the two groups in terms of the way respondents evaluate the stressful situation as well as the selected coping strategy.

First, Korean respondents who had a strong independent self-construal appraised the stressful situation positively even under stress. Summer is the only season that Korean boaters can enjoy boating without weather-related limitations. Lake Chung-pyung is a famous weekend destination in summer. Visitors to Lake Chung-pyung might expect a large number of visitors or other stressful factors on the lake because it is a high traffic destination during the peak season. This expectation might influence their evaluations of a stressful situation. Since they may have already expected undesirable condition on the lake, it is possible they were more likely to positively appraise the situation.

With regard to the appraisal and coping relationship for the high independence group, Korean respondents with a strong independent self-construal were more likely to engage in behavioral coping (i.e., resource substitution, activity substitution, direct action, and temporal substitution) when they appraised the situation as controllable. However, they did not consider rationalization as a coping option. This supports previous research which focused on the effect of different types of self-construal on coping behavior. For instance, Chun, et al. (2006) noted that behavioral coping strategies

are known to be more common in individualistic cultures or people with a strong independent self-construal. Considering that people with strong independence are known to emphasize individual rights, goal achievement, personal autonomy, and self-fulfillment (Markus and Kitayama, 1991; Singelis, 1994), they are more likely to be sensitive to the conditions at a recreational site. That is, when they are disturbed by outside factors influencing their goals, they are more likely to react in direct ways. At the same time, they are less likely to select a cognitive coping option (e.g., rationalization) (Chune, et al., 2006). These findings add to this literature and showed that individuals with a strong independent self-construal were more likely to respond to stressful factors and change their behavior (substitution of recreation activity/setting/time, direct action) to avoid the undesirable conditions. The other group reported a weaker independent self-construal. First, there was no relationship between stress and appraisal for those with a weak independent self-construal. The level of stress did not influence the way people evaluate the stressful situation. Thus, no mediating role of appraisal was found in the relationship between stress and coping for this group. Instead, only the appraisal of the stressful situation impacted the diverse types of coping options.

Regarding the relationship between appraisal and coping for respondents with a weak independent self-construal, their positive evaluation of the stressful situation was related to different types of coping options including both behavioral and cognitive coping (i.e., direct action, activity substitution, absolute displacement, and rationalization). The strongest relationship was observed for the relationship between appraisal and direct action. People with low independence were likely to complain about

the setting condition to a service provider or other members of the group. Direct action refers to behaviors directed toward changing the stressful situation (Miller & McCool, 2003). However, it does not require a substitute behavior directly related to the recreation activity; e.g., changing from one recreational site to another one. It is more about complaints, letter writing, or political action aimed at influencing the undesirable conditions (Ziemann & Haas, 1989). Given that people with stronger interdependent self-construal tend to avoid conflict with others, this finding is somewhat contradictory with previous coping literature. However, one of the items measuring direct action is talking about the current negative situation with the members of their group. By talking about the situation, they may want to let it go and not change their recreation behaviors. However, further investigation is needed to know why people with stronger interdependent self-construal were more interested in direct action.

However, altering their preferred boating activity was the second strongest option for Korean respondents with a weak independent self-construal. Substitution of boating is not a difficult option for them. There are approximately 65 commercial recreational boat rental companies around Lake Chung-pyung and visitors to this lake have diverse recreation activities provided by these companies (e.g., jet-skiing, floats, inflatable, wakeboards, pontoon boats, etc.). For instance, if they found jet-skiing to be unenjoyable, they could easily change their boating activity to another such as renting a pontoon boat. Since respondents with weak independent self construals tend to reduce the amount of energy consumed to avoid stressors, substitution of boating with another activity is an

easier option compared to other coping strategies such as resource or temporal substitution.

In contrast to the high independent self-construal group, respondents with weak independent self-construals were more inclined to select rationalization as a coping behavior. That is, they tended to think of the stressful situation in a positive way and enjoy the recreation activity. This result corresponds with past work that has documented that people with a weak independence or strong interdependence are more likely to choose a cognitive coping option when they perceive a stressful situation (Yeh, et al., 2006).

The last coping option predicted by appraisal was absolute displacement. Respondents with low independence considered displacement from the lake because of stressors when they judge the situation as controllable. But this was the weakest relationship among the relationships between appraisal and coping. This coping strategy is normally associated with high levels of stress. When respondents with weak independent self-construals concluded that they could change the situation, they were likely to be displaced from the setting. Considering that people with weak independent self-construals were less likely to be involved in conflict with others, they may choose to leave the site where they're experiencing the stressful condition to avoid the stressor itself. Instead of negotiating the situation, they chose to leave. Even though this is a behavioral coping option, it is not related to changing activities or resources to avoid the situation. For them, leaving the site may be the easiest way to avoid the stressful condition.

5.6. Coping Dimensions for American Respondents

After failing to establish a valid measurement model using confirmatory factor analysis (CFA), I conducted an exploratory factor analysis (EFA) using 20 coping items. The results showed a four-dimensional solution for coping items for the American group. The dimensions are a) direct action, b) disengagement, c) temporal substitution, and d) rationalization. Three of the coping dimensions—direct action (complaints to authorities), temporal substitution (changing the timing of the recreation activity), and rationalization—were identical to the coping dimensions identified in previous research (Miller & McCool, 2003; Shelby & Veske, 1991; Schneider & Hammitt, 1995). "Direct action" refers to behaviors oriented toward changing an undesirable environment, but this behavioral coping is not relevant to substitution. Instead, it is more related to political action, such as reporting problems to authorities or discussing the stressful conditions with other members of the group. Miller and McCool (2003) found that people who showed a high level of stress are more likely to engage in direct action. Changing their recreational preference such as time, location, or activity may not provide the same benefits as recreationists originally expected (Shelby & Vaske, 1991). By discussing the stressful situation with the relevant people, recreationists can expect a positive change in a recreational setting and do not need to change their behaviors. "Temporal substitution" is one of the behavioral coping strategies that changes in recreationists' behavior in response to undesirable circumstances. If visitors notice that the recreational site is crowded during the time/season that they visit, they might consider changing their visits to another season or time of the day. McCool and Utter's

(1982) recreational boating study provides support for this result. They studied the behaviors of white water boaters whose permit applications had been rejected for the Middle Fork of the Salmon River. Their results indicated that when they perceive negative setting elements, 34% of boaters rescheduled the time of their recreation activity. In their study, temporal substitution was that boaters' preferred strategy when the permit allowed users to choose other options, especially when the boaters' time was flexible.

The dimension "rationalization" is one of the cognitive coping dimensions. This dimension is identical to the "cognitive coping" dimension used in previous literature. It refers to a cognitive effort to view the situation in a positive way and to enjoy the recreation activity. Rationalization does not require a change of behavior. In the analysis of the American sample, all three items of rationalization belonged to this dimension. "Disengagement" is a new coping dimension that emerged from the EFA. The items belonging to this dimension are: "never visit this lake area because of the stressful condition," and "boating is no longer important to me because of the condition." The former item was from "displacement" while the latter item related to "activity substitution" in the original coping scale. Although one is related to substitution of recreational resources and the other one involves activity substitution, both state the probability of disengaging from a recreational preference. They indicate the termination of the activity and visits to the site because of the undesirable conditions at the lake. Also, both items used negative expressions such as "never" and "no longer." Miller and McCool (2003) conducted an EFA for coping items among visitors to Glacier National

Park. Their analysis also identified a dimension characterized as absolute displacement, which contains both the cessation of recreational activity in the park and the intention to never visit the park again because of the detracting conditions. This is similar to the finding of a new dimension in the current study, disengagement from a recreation activity/resource.

5.7. The Relationships among Stress, Appraisal, and Coping for American Respondents

I found no mediation of appraisal on the relationship between stress and coping. First, stress level did not have an influence on respondents' appraisal of the boating conditions at Lake Granbury, although how recreationists appraised the lake conditions affected the respondents' selection of coping behavior. If recreationists at Lake Granbury appraised the negative boating situation as controllable, they were more likely to change the time/day/season of their boating activity to avoid the negative condition. However, they were less likely to rationalize the undesirable condition in a positive way.

Recreational substitutability includes changing recreation activities, location, time, and means of access. Temporal substitution refers to visiting the same recreational setting in a different season, on a different day (weekday/weekend), or at a different time of the day (morning/afternoon/evening). When recreationists are aware of the best timing of their activity, it will be easier for them to visit the same location at a different time to avoid negative setting elements. In this research, I found a positive relationship between appraisal and temporal substitution. This is consistent with previous findings in coping research: positive appraisals of stressors in a recreational context (e.g., "I can

overcome this situation") were more related to behavioral coping strategy such as substitution of recreation time, activity, and place (Lazarus and Folkman, 1984; Schuster et al., 2003, 2006). The result of this study partially supported this by finding a positive relationship between appraisal and temporal substitution. Moreover, Shelby and Vaske (1991) found that temporal substitution was one of the important coping options for recreational fishers in two New Zealand rivers. Their study findings indicated that some fishers would substitute the same activity on the same river at a different time if they thought the situation was controllable.

Instead of changing their behavior to avoid undesirable conditions, some recreationists rationalize the situation (e.g., "I just enjoy my recreational activity no matter what happens"). Rationalization is a cognitive coping that may reduce the amount of stress in a recreational context. Previous studies on outdoor recreation have identified positive outcomes of rationalization as a coping strategy (Heberlein & Shelby, 1977; Manning & Valliere, 2001; Schuster & Hammitt, 2000). These researchers have found that sometimes recreationists rationalize the annoying situation in a positive way and to maintain their enjoyment. Despite the positive outcomes of rationalization, Miller and McCool (2003) pointed out that people with a higher stress levels were less likely to engage in cognitive coping strategies such as rationalization. Instead, they were more willing to be displaced from the recreational setting. People with a moderate stress level were more likely to choose substitution behaviors as their coping strategy.

In this study, I also observed that positive appraisals of a stressful context were negatively related to rationalization. Positive appraisal refers to whether a recreationist

perceives the annoying situation as controllable. Thus, if a person concluded that he can overcome the situation, s/he would substitute the timing of recreation activity rather than rationalize the situation. This result provides insight on how recreationists' appraisal of stressful conditions within the site is related to cognitive coping options. Since there is little research about the direct relationship between appraisal and rationalization, further investigation is needed.

5.8. The Moderating Effect of Place Attachment, Leisure Activity Involvement, and Self-construal on the Hypothesized Relationship for American Respondents

There was no moderating effect of place attachment on the hypothesized relationship among American respondents. In other words, there was no difference between high place attached and low place attached on the hypothesized relationships among stress, appraisal, and new coping dimensions (i.e., direct action, disengagement, temporal substitution, and rationalization). For recreationists at Lake Granbury, their attachment to the lake did not impact the influence of stress on appraisal or the coping strategy they selected.

Second, I also found no moderating effect of leisure activity involvement on the relationship among stress, appraisal, and new coping dimensions. There was no difference between the high and low leisure activity involvement groups in terms of the hypothesized relationships. The level of involvement with recreationists' preferred boating activity at Lake Granbury did not influence the perception of stressors and its relationships with evaluation and selected coping strategy.

Finally, there was no moderating effect of self-independence on the hypothesized relationship among stress, appraisal, and new coping dimensions. For the hypothesized relationships, I found no difference between the strong independence group and the weak independence group. Recreationists' self-construal (i.e., self-independence) did not influence the impact of stress level on appraisal and coping dimensions.

6. CONCLUSIONS

The purpose of this dissertation was to explore the relationships among stress level, cognitive appraisal, and coping behaviors in the context of water-based recreation. The stress and coping relationship has been previously researched in the recreation field, but not many studies have tested the mediating role of appraisal in the relationship. Appraisal refers to a cognitive process that evaluates a potentially stressful condition and possible coping options. This study has shown that how one evaluates the stressful situation (e.g., whether I can overcome this situation) mediates the stress and coping relationship. In this conclusion, I discuss the implications and limitations of the study and provide recommendations for future research.

6.1. Implications

6.1.1. Theoretical Implications

This study supported the transactional theory of stress and coping proposed by Lazarus and Folkman (1984). The theory posited that when individuals perceive stress — defined as the imbalance between available resources and current conditions — they begin to appraise the situation, determining whether the condition is controllable or not. The theory also assumes that a positive appraisal of stressors is more strongly related to behavioral coping strategies (e.g., substitution of activity/time/resources). Alternately, a negative appraisal is more likely to result in cognitive coping strategies (e.g., rationalization). Previous coping studies have shown that high levels of stress result in

the selection of behavioral coping (Miller & McCool, 2003). Moreover, the importance of the cognitive evaluative process of potential stressors and coping options has been noted by previous research (Bouchard, et al., 2004; Schuster, et al., 2003, 2006). These authors indicated that people are more likely to directly deal with potential stressors by engaging in behavioral coping if they perceive the situation as controllable. Thus, this study tested the mediating role of appraisal in the process of stress and coping. The results showed that the stress–coping relationship was mediated by appraisal; i.e., a positive or negative evaluation of a stressful situation. Stress affected coping behavior when individuals positively appraised the stressful situation (e.g., "I can overcome the stressful situation."). Positive evaluation of a stressful situation (e.g., I can overcome the situation) tended to result in the selection of behavioral coping. Rationalization, one of the cognitive coping dimensions, was also affected by positive appraisal. As discussed earlier, this may be due to the characteristics of the Korean sample: people with a more interdependent self-construal are more likely to choose rationalization as their coping option. For American respondents, the results partially supported the transactional theory. Although stress did not have an influence on appraisal (no mediation between stress and coping), positive appraisal of the stressful situation was related to behavioral coping (temporal substitution), whereas negative appraisal was related to cognitive coping (rationalization). In sum, these findings build empirical support for the transactional theory of stress and coping by confirming the structural relationships among stress level, cognitive appraisal, and coping behavior.

In addition, this study addressed several additional research questions: whether place attachment, leisure activity involvement, and self-construal moderate the stress–appraisal–coping relationships. Although these constructs have been previously studied by leisure researchers in numerous ways, little is known about how they might moderate stress and coping behavior. The results indicated that recreationists' attachment to a recreational setting, involvement with an activity, and type of self-construal shaped the relationships tested in my hypothesized model in different ways. However, this was only observed among the Korean respondents. The moderators did not affect the relationship among American respondents. Regarding the moderating effects tested for Korean respondents, place-attached recreationists did not consider displacement but they were most likely to change the location of their boating activity within the lake. Also, less-attached recreationists considered changing boating activity to another recreation activity when they perceived the condition to be stressful. Also, the study found that activity-involved recreationists were most likely to change the location of their boating activity to avoid stressors. However, recreationists with low activity involvement tended to change the time of their boating when they encountered a stressful situation. Furthermore, recreationists with more independent self-construals have only considered behavioral coping strategies. For those with less independence, they were interested in both behavioral and cognitive coping behaviors. With regard to the American recreationists, place attachment, leisure activity involvement, and self-construal did not have a moderating effect on the hypothesized relationships. In conclusion, this study provided limited empirical evidence that involvement with recreational resources and

activities as well as self-conception can influence an individual's perception and evaluation of setting conditions and thus affect selected coping strategies under stressful conditions.

6.1.2. Practical Implications

This study provided an understanding of recreationists' perceptions of stressful factors in two water-based recreation areas and how they evaluate and cope with those undesirable situations. In the past, researchers and practitioners in the field of outdoor recreation have focused their attention on why people like (satisfaction) or are attached to a recreational setting (attachment, loyalty). It is also important to understand why recreationists sometimes are dissatisfied with a recreational place and how they want to minimize unpleasant feelings. Thus, the practical insights presented in this study will prepare managers for lake users' responses toward stressful conditions.

For instance, my research found that, even under potentially stressful conditions, people tended to think of the situation as controllable. And they adopted diverse coping behaviors related to time, location, and/or available boating activities to better enjoy the activity and, ideally, reduce the level of stress. Although some stressors are not easily managed by service providers, they should consider developing different options for their visitors. For example, several options for lake users might be: 1) to consider early or late boating times for the users who want to avoid crowds, 2) zoning the lake for different purposes (e.g., specific zones only allow jet skiing, etc.), and 3) provision of different types of boating activities for diverse users. This research found that when

something negative happened, recreationists sought other available options and some engaged in substitution behaviors. Thus, by incorporating different types of options within a recreational site, managers can expect better use of the lake as well as increased enjoyment for recreationists, even with undesirable boating conditions.

Specifically, I would like to review the results for Korean and American respondents. First, Figure 13 is the structural relationships among stress, appraisal, and coping for Korean respondents. As Korean recreationists with higher stress are more likely to appraise negative setting conditions as controllable, it would be effective to let them know of available alternative recreation options at Lake Chung-pyung. If people at the lake are aware of the potential stressors and available options, they are more likely to evaluate the situation in a positive way, and be willing to cope with the stressors. Furthermore, the relationship between appraisal and selected coping strategy would inform us on more specific ways to accommodate the recreationists. When Korean recreationists conclude that a potential stressor is manageable, they are more likely to change the time and/or season of their boating activity, consider altering activities, visit another area of the lake, complain about the situation to others, be displaced from the lake, or try to rationalize the problem. For those with a preference for substituting their recreation options (activity, time, and location), service providers can prepare a list of recreational options available at Lake Chung-pyung and communicate them to their visitors. They can provide information about which side of lake is more appropriate for a specific boating activity (i.e., jet-ski, pontoon boating). Ideally, zoning the lake would be one potential strategy for avoiding crowds or conflicts with other boats. However, if this

cannot be implemented immediately, providing information about appropriate locations and times for each water recreation activity would be another way to accommodate users with less conflict. This might be another solution for those who chose to be displaced from the lake because of the problems encountered. Koreans with a positive appraisal of potential stressors also considered complaining about the situation to a service provider or other members of their group. Customer complaints are a form of customer feedback, which can be a very effective and meaningful source of information to increase customer satisfaction (Sanes, 1993). Taking care of a dissatisfied customer's complaints is a key to building trust between a consumer and a service provider (Heung & Lam, 2003). In this regard, managers should consider that when people feel that their opinions matter, it is more likely that they will be positive about the service they have received. Since there are many commercial recreation providers around Lake Chung-pyung, they are most likely to be interested in how they can accommodate users' preferences and increase their profit. In this regard, the positive relationship between appraisal and direct action (willingness to complain about the problem) could provide valuable information for these companies.

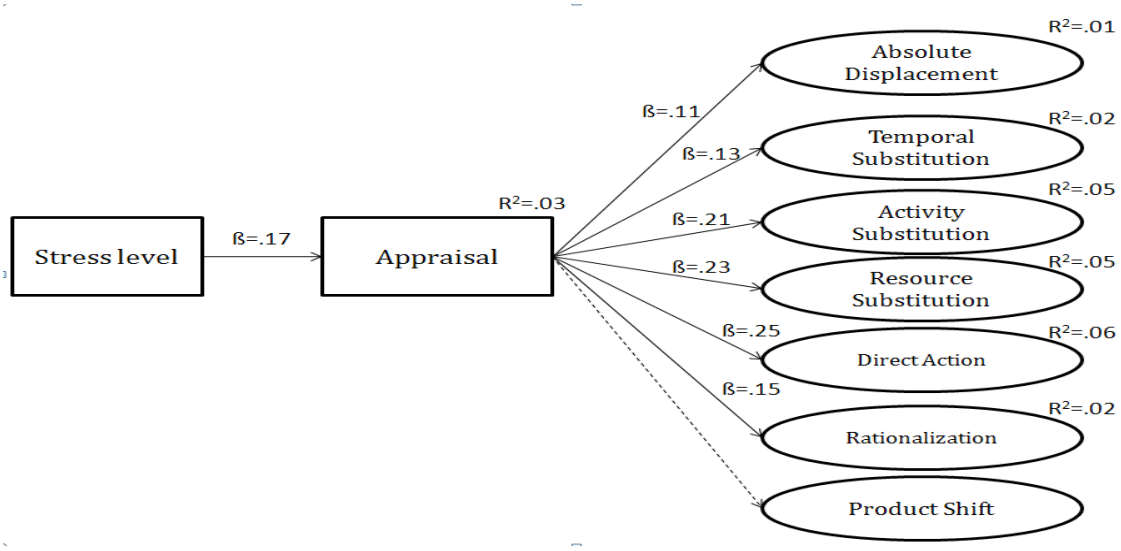


FIGURE 13 Final structural model for Korean respondents.

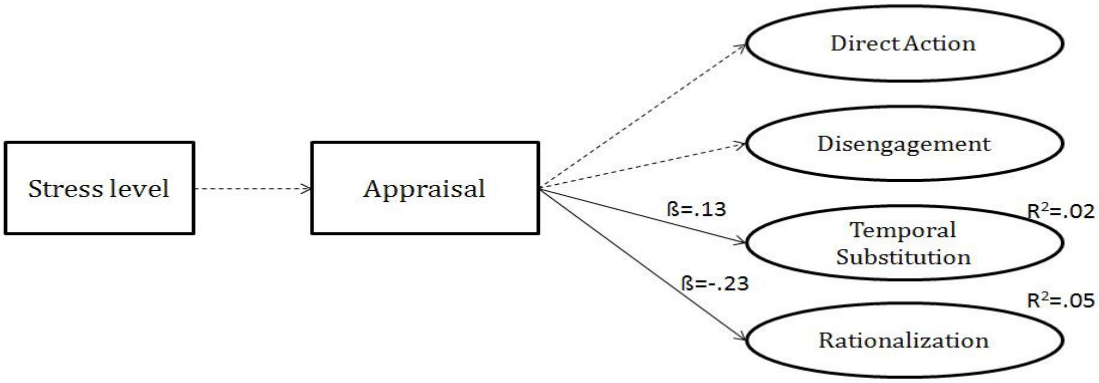


FIGURE 14 Final structural model for American respondents.

Figure14 depicts the relationships among stress, appraisal and coping for American respondents. In short, American recreationists at Lake Granbury who accepted the unpleasant situation as controllable (positive appraisal) were more likely to change the timing of their boating activity. Since the respondents reside near or own property at

Lake Granbury, their most convenient way of avoiding negative setting elements was visiting the lake on a different day of the week (weekday/weekend) or time of a day (morning/afternoon). Considering this relationship, managers should provide more information about the best day/time/season for specific recreation activities at Lake Granbury. Knowing the best time for each boating activity would likely better satisfy recreational boaters' expectations at the lake. Also, the results indicated that they are less likely to rationalize the stressors in a positive way. This supports previous findings in coping literature for two reasons: a) American recreationists who have independent self construals are less likely to rationalize stressors, and b) positive appraisal is negatively related to cognitive coping strategies.

6.2. Limitations and Future Research Recommendations

There are some limitations with this investigation of coping processes within the context of water-based recreation. First, the respondents in this research were Korean recreationists at Lake Chung-pyung and American recreationists at Lake Granbury. Although the activities available at these lakes are similar, different users were intertwined in this sample. For example, there were jet-skiers, wake-boarders, water-skiers, pontoon boat users, people fishing, and so on. These water-based recreationists can be understood in a similar way in that they use the same location for their recreation activity. However, we need to understand that these users' preferences or patterns of lake use can be different from and sometimes conflict with each other. For future investigations, it would be better to segment these water-based recreationists into

different groups so we could better understand how they are similar to or different from each other in terms of the potential stressors they perceive at a lake and their coping responses. In addition, the nature of the experience for American and Korean respondents may be different from each other as indicated in the methods section. American respondents typically own a boat and drive by themselves so they have greater control over boating location and timing. For instance, they may go to other lakes to avoid potential stressors or change the timing of the boating activity because they live near Lake Granbury. There is also greater potential for anti-social behavior. However, owning a boat is not common for Korean recreationists at Lake Chung-pyung because most of the visitors come from a big city (e.g., Seoul) to the lake area to enjoy water-based recreation during weekends or holidays. Thus, they rent a boat if they have a boating license or sometimes hire someone to pilot the boat in order to enjoy their recreational activity (e.g., jet-ski). We should acknowledge that the recreational experience of these two groups can be very different. Future research also needs to consider exploring and comparing coping processes among recreationists within similar contexts.

The initial purpose of the analysis in this study was to compare two different samples: Korean and American recreationists. However, analysis of the pooled sample showed a bad fit for the hypothesized model to the data. Analysis of each group illustrated that the model misfit was primarily driven by the American data. Because of this, I was unable to directly compare the two cultures in terms of their stress and coping relationships. Instead, one type of self-construal, the degree of independence, was used

to compare the hypothesized relationship for each group: Korean and American respondents. Previous cultural psychology research has compared East Asians with European Americans based on the assumption that East Asians are more likely to be interdependent while European Americans tend to be independent. In this study, the analysis supported this assumption. Korean respondents were found to have a more interdependent self-construal compared to American respondents, whereas American respondents were more likely to have an independent self-construal. The assumption of previous cultural comparison studies is that self-construal is one of the things that determine differences between people from two different cultures. Based on this, I divided each sample into two groups based on their self-construal (either independence or interdependence) to test how people with more independence are different from people with less independence. For the Korean group, people with a strong independence did not consider a cognitive coping option while those with a weak independence considered rationalization as one of their coping strategies. There was no moderating effect of self-construal for American respondents. Although this study examined how self-construal influenced individual's stress and coping processes within one culture, future research should compare this hypothesis across different cultures. It will contribute to our knowledge about how people from different cultures perceive a situation and how they react to the stressors in a recreational context. Future work should also consider examining these processes across age cohorts to test whether the effect of self-construal holds across generations. With younger generations increasingly adopting western cultural practices, the impact of interdependence may be waning. Finally, it is

likely that there are other social psychological factors that influence a person's stress and coping behavioral choices. Previous coping research investigated the effect of social support on coping behavior (Thoits, 1986, 1995), the relationship between coping and personality (Connor-Smith & Flachsbart, 2007; Saklofske & Kelly, 1995), and previous experiences in relation to stressors (Schuster & Hammitt, 2003, 2006). Although this dissertation primarily focused on how the cognitive appraisal of stressors mediates the stress and coping relationship, future study should consider other factors that may have an important role for shaping individual perceptions of a stressful situation within a recreational context and the selection of a coping strategy.

In addition, according to the statistic suggested by the Ministry of Culture, Sports and Tourism in Korea (Online Culture Statistic by the Korean Ministry of Culture, Sports, and Tourism, 2010), 32.8% of Koreans have participated in club-based recreation/leisure activities. The age group of these participants was up to teens (7.5%), 20s (14.6%), 30s (15.0%), 40s (19.6%), 50s (19.2%), 60s (14.1%), and over 70 (10.0%). In the current study, the survey did not ask whether they were participating in a club-based water recreation activity. However, the attitude and behavior of East Asians with interdependent self-construals may be influenced by other members of a group (Markus and Kitayama, 1991). Therefore, future studies of Korean recreationists should consider this group-based recreation activity and include the questions related to group participation within the survey instrument to investigate the influence of group dynamics on the perception of potential stressors in outdoor recreation settings.

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APPENDIX

SECTION A: YOUR BOATING HISTORY

The following questions address your boating experiences on Lake Granbury for the 2010 boating season

1. Is your home on/near Lake Granbury your primary residence?

 Yes (If "yes", skip to Question 1b) No

1a. If not, approximately how many days did you spend there during the past 12 months? Number of days

1b. How long have you owned your Lake Granbury residence? _____ # of years

1c. Does your property have a bulkhead, dock or slip? ☐ Yes ☐No (If "no", skip to Question 3)

2. Has your waterfront (e.g., yard, bulkhead, dock) been damaged? ☐ Yes ☐No

2a.What was the cause of the damage? _____

3. Do you boat recreationally on Lake Granbury? Yes No (If "no" skip to Question 9a) 3a. How long have you been boating? _____# of years

4. How many days did you spend boating on Lake Granbury over the last 12 months? _____# of days

4a. If 0 (zero) days, when did you last boat on Lake Granbury? _____ year

5. Overall, how many days did you spend boating (on all waterways) over the last 12 months? _____# of days 5a. If 0 (zero) days, when did you last boat? _____ year

6. What type(s) of watercraft do you use on Lake Granbury? *(Check all type of boat you use)*

- Ski boat
- Fishing or bass boat
- Pontoon boat
- Kayak
- Canoe
- Wakeboard boat
- High performance boat
- Personal Watercraft (PWC, e.g., Jet Ski)
- Sailboat
- Other (Please specify) _____

7. Which of these watercraft do you **use most often** on Lake Granbury? (*Check only one*)

- € Ski boat
- € Fishing or bass boat
- € Pontoon boat
- € Kayak
- € Canoe
- € Wakeboard boat
- € High performance boat
- € Personal Watercraft (PWC; e.g., Jet Ski)
- € Sailboat
- € Other (Please specify) _____

8. What activity do you **most often enjoy** on Lake Granbury? (*Check only one*)

- € Skiing
- € Exercise
- € Wakeboarding
- € Towing inflatables/water toys
- € Fishing
- € Cruising up and down the lake
- € Competition/racing
- € Other (Please specify) _____

9. Do you boat as often as you would like on Lake Granbury?

☐ Yes (If "Yes" skip to Question 10) ☐No (Go to Question 9a)

9a. Please indicate to what extent the following statements reflect factors that inhibit your ability to boat as often as you would like. (*Circle one number for each statement that best reflects your opinion*)	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I don't boat as often as I would like because…					
a. I have no interest in boating	1	2	3	4	5
b. I'm no longer physically able	1	2	3	4	5
c. I can't afford to go boating	1	2	3	4	5
d. It's too hot	1	2	3	4	5
e. It's too crowded	1	2	3	4	5
f. I have no way to access the Lake	1	2	3	4	5
g. The lake is too small	1	2	3	4	5
h. The behavior of other boaters is unsafe	1	2	3	4	5
i. Areas of the lake are too shallow	1	2	3	4	5
j. Poor water quality	1	2	3	4	5
k. Other boaters are inconsiderate	1	2	3	4	5
l. Public access is inconvenient	1	2	3	4	5
m. I no longer have enough time	1	2	3	4	5
n. Work commitments keep me away from boating on the lake	1	2	3	4	5
o. My family no longer has an interest in boating	1	2	3	4	5
p. Shoreline owners/residents are inconsiderate	1	2	3	4	5
q. At times, the water surface is too rough	1	2	3	4	5
r. There's too much litter in the water	1	2	3	4	5

If you don't boat, please skip to Section F.

10. Do you have a place or area on Lake Granbury that you consider special?

☐ Yes ☐No (If "No" please skip **to SECTION B**)

10a. If "yes," in what zone does this special place lie? _____

_____

10b. Why is this place special? (*Please explain*)

_____

SECTION B: YOUR USE OF THE LAKE DURING 2010
The following questions address your boating experiences on Lake Granbury for the 2010 boating season

11. What did you like ***best*** about your visits to Lake Granbury?

_____

12. What did you like ***least*** about your visits to Lake Granbury?

_____

13. How do you feel about the **number of people you encountered** on your visits to the lake for the 2010 boating season? (*Check only one*)

1	2	3	4	5
Would like to have seen a lot more people	Would like to have seen a few more people	Neither too many nor too few	Would like to have seen fewer people	Would like to have seen a lot less people

14. How did the **number of people you saw on the lake compare** with what you expected to see on your visits to Lake Granbury for the 2010 boating season? (*Check only one*)

1	2	3	4	5
A lot less than I expected	A little less than I expected	About what I expected	A lot more than I expected	I didn't really have any expectations

15. How did the **number of people you saw affect your overall enjoyment** of your visits to Lake Granbury for the 2010 boating season? (*Check only one*)

1	2	3	4	5
Added a lot to my enjoyment	Added a little to my enjoyment	No effect on my enjoyment	Detracted a little from my enjoyment	Detracted a lot from my enjoyment

16. In light of the **number of boats** you saw on the lake over the 2010 boating season, please rate how safe you felt while boating: (*Circle only one number below*)

1	2	3	4	5
Not at all safe		Moderately safe		Extremely safe

17. In light of the **behavior of other boaters** on the lake over the 2010 boating season, please rate how safe you felt while boating: (*Circle only one number below*)

1	2	3	4	5
Not at all safe		Moderately safe		Extremely safe

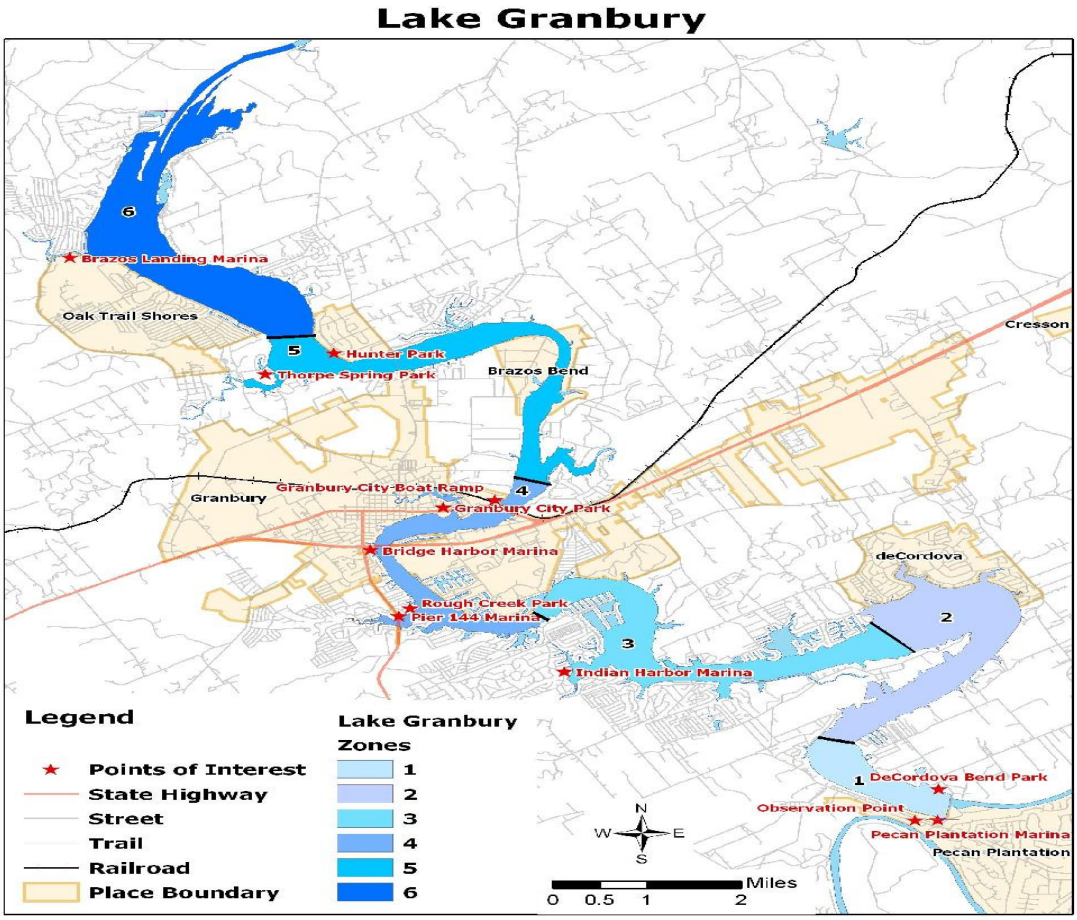
18. Using the following scale, how would you describe the boating conditions ***out on the water*** during your visits to Lake Granbury over the 2010 boating season? (*Circle only one number below*)

0	1	2	3	4	5	6	7	8
Not at all crowded		Slightly crowded			Moderately crowded			Extremely crowded

19. Using the following scale, how would you describe the boating conditions ***at access points*** (e.g., boat ramp) during your visits to Lake Granbury over the 2010 boating season? (*Circle only one number below*)

0	1	2	3	4	5	6	7	8
Not at all crowded		Slightly crowded			Moderately crowded			Extremely crowded

We would like to know what areas of Lake Granbury you most often visit. Please reference the map below when responding to the next four questions (Q20a-d) by selecting the zones that BEST reflect your boating activity.



20.	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Not applicable
a. Where did you start most often? (*Select only one*)	€	€	€	€	€	€	€
b. Indicate the area(s) where you spent the most time (*Select all that apply*)	€	€	€	€	€	€	€
c. Identify the area(s) you most often avoided (*Select all that apply*)	€	€	€	€	€	€	€
d. Identify the area(s) where you felt most often unsafe (*Select all that apply*)	€	€	€	€	€	€	€

21. If you indicated avoiding areas on the lake, why did you avoid those locations?_____

22. If you indicated feeling unsafe on the lake, why did you feel unsafe in those places?__

23. Would you like to see some activities restricted to certain areas of the lake?

☐ Yes (Go to Question 23a) ☐ No (If "No" skip to Question 24)

23a. Select an activity and corresponding zone (from the map on the preceding page) where you would like to see the activity restricted, reduced or removed from that zone.

	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
Personal watercraft (e.g., Jet Ski)	€	€	€	€	€	€
High performance boating	€	€	€	€	€	€
Skiing/Wakeboarding	€	€	€	€	€	€
Canoeing/Kayaking	€	€	€	€	€	€
Sailing	€	€	€	€	€	€
Other _____ _____	€	€	€	€	€	€

24. Given the conditions you observed on Lake Granbury for the 2010 boating season, how do you feel about each of the following **potential management actions**?

(*Circle one number for each statement that best reflects your opinion*)	Strongly Oppose	Oppose	Neutral	Support	Strongly Support
a. Provide improved public access to the lake	1	2	3	4	5
b. Zone the water surface to provide specific uses at specific places	1	2	3	4	5
c. Provide more aggressive enforcement of safety rules and regulations	1	2	3	4	5
d. Expand the number of marina slips	1	2	3	4	5
e. Cite boaters who's music can be heard more than100 feet from their boat	1	2	3	4	5
f. Restrict personal watercraft use to designated areas only	1	2	3	4	5
g. Establish "off limits" zones to protect sensitive resources	1	2	3	4	5
h. Allow more marina development along the shoreline	1	2	3	4	5
i. Require training for the operation of personal watercraft	1	2	3	4	5
j. Require development standards for shoreline retaining walls and bulkheads	1	2	3	4	5
k. Allow more extensive retail development around the shoreline	1	2	3	4	5
l. Ban the use of wake-creation devices (e.g., water ballasts, fat-sacks, etc.)	1	2	3	4	5
m. Require training for all watercraft operators	1	2	3	4	5
n. Ban personal watercraft on public holidays	1	2	3	4	5
o. Restrict activities by day of week during peak use periods	1	2	3	4	5

	(e.g., holidays)					
p.	Install more public boat ramps	1	2	3	4	5
q.	Develop the fish stock to improve fishing on the lake	1	2	3	4	5
r.	Dredge the lake to improve depth	1	2	3	4	5

SECTION C: CONDITIONS ON LAKE GRANBURY

The following questions address your perception and response to conditions you may have encountered on Lake Granbury over the 2010 boating season

25. To what extent did you consider the following issues *stressful* on Lake Granbury this past boating season?

(*circle one number for each statement that best reflects your opinion*)	Not at all Stressful	Slightly Stressful	Moderately Stressful	Very Stressful	Not Applicable
a. Improper behavior of other visitors	1	2	3	4	5
b. Law enforcement	1	2	3	4	5
c. The number of other visitors encountered	1	2	3	4	5
d. Interaction with lake management personnel	1	2	3	4	5
e. Other members of my group	1	2	3	4	5
f. Concerns about accidents	1	2	3	4	5
g. Insects	1	2	3	4	5
h. Weather	1	2	3	4	5
i. The provision of fresh water	1	2	3	4	5
j. Litter on beaches and shoreline	1	2	3	4	5
k. Poor water quality	1	2	3	4	5
l. Unsafe operation of personal watercraft (e.g., jetskis)	1	2	3	4	5
m. Lack of navigational aids on the lake	1	2	3	4	5
n. Disposal of human waste	1	2	3	4	5
o. Playing amplified music on the lake	1	2	3	4	5
p. Boat engine noise	1	2	3	4	5

q. People being inconsiderate	1	2	3	4	5
r. Conflicts with other boaters for shoreline space	1	2	3	4	5
s. Conflicts with docks over shoreline space	1	2	3	4	5
t. Debris at launch ramps	1	2	3	4	5
u. Inadequate toilet facilities on the lake	1	2	3	4	5
v. Erosion of shoreline	1	2	3	4	5
w. Unsafe operation of watercraft by other boaters	1	2	3	4	5
x. Aquatic vegetation	1	2	3	4	5
y. Water surface too rough	1	2	3	4	5
z. Other negative setting elements: _____ (please specify and indicate your level of stress)	1	2	3	4	5

26. Considering the stressors noted above (Q25), please indicate the extent to which you experienced the following emotions in response to factors that might have detracted from your visit to the lake.

When I encounter stressful situations on Lake Granbury (I indicated above), I feel…	Not at all	Slightly	Moderately	Extremely	Not Applicable
a. Distressed	1	2	3	4	5
b. Irritable	1	2	3	4	5
c. Upset	1	2	3	4	5
d. Ashamed	1	2	3	4	5
e. Nervous	1	2	3	4	5
f. Guilty	1	2	3	4	5
g. Scared	1	2	3	4	5
h. Hostile	1	2	3	4	5
i. Jittery	1	2	3	4	5
j. Afraid	1	2	3	4	5

27. The following are some strategies people have used to avoid stressful situations while boating. Please read each statement below and check a number indicating the extent to which each statement describes your response to boating on Lake Granbury.

In response to the stressful situations, I… (*circle one number for each statement)*	Does not Describe		Describes Moderately		Describes Very Well
a. Decided to never visit this lake area again because of the stressful situation(s)	1	2	3	4	5
b. Realized that doing some activity other than boating would allow me to avoid the stressful situation(s)	1	2	3	4	5
c. Told myself it was unreasonable to expect that things should have been different in this area	1	2	3	4	5
d. Talked with other members of my group about the stressful situation(s)	1	2	3	4	5
e. Decided that, if I visit in this area in the future, visiting during a different season would help avoid the stressful situation(s).	1	2	3	4	5
f. Decided to leave the lake area now because of the stressful situation(s)	1	2	3	4	5
g. Decided to talk with lake management staff about the stressful situation(s)	1	2	3	4	5
h. Told myself that there was nothing I can do about the stressful situation(s), so I just enjoyed the experience for what it was	1	2	3	4	5
i. Decided to talk to someone who could do something about the stressful situation(s)	1	2	3	4	5
j. Decided to never boat again because of the stressful situation(s)	1	2	3	4	5
k. Told myself the stressful situation(s) was actually a symptom of some larger problem	1	2	3	4	5
l. Decided that, if I visit this area in the future, visiting at a different time of day would help avoid the stressful situation(s)	1	2	3	4	5
m. Planned to do other things besides boating to avoid the stressful situation(s)	1	2	3	4	5

n. Saw the stressful situation(s) as a positive chance to grow personally	1	2	3	4	5
o. Realized that I could avoid the stressful situation(s) in the future by visiting this area at a different time	1	2	3	4	5
p. Decided that I would come back to the lake at the same time, but would visit a different area of the lake to avoid the stressful situation(s)	1	2	3	4	5
q. Decided that, for this area, the condition/situation was what it should be	1	2	3	4	5
r. Decided that boating is no longer important to me because of the stressful situation(s)	1	2	3	4	5
s. Realized that visiting different areas of the lake would allow me to avoid the stressful situation(s)	1	2	3	4	5
t. Realized that the stressful situation(s) was really suitable after all	1	2	3	4	5

28. Considering the potentially stressful conditions you may have encountered throughout the 2010 boating season (refer back to Q25) on Lake Granbury, what was your typical response to the conditions encountered?

Regarding stressors I indicated earlier, I think…	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a. I had to accept the situation as it was	1	2	3	4	5
b. I could change the situation or do something about it	1	2	3	4	5
c. I needed to know more about the situation before I could act	1	2	3	4	5
d. I had to hold myself back from doing something about the situation	1	2	3	4	5

29. Please indicate how you feel about Lake Granbury by responding to each of the statements below.

(*circle one number for each statement)*	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a. I feel that Lake Granbury is a part of me	1	2	3	4	5
b. Visiting Lake Granbury allows me to spend time with my family/friends	1	2	3	4	5
c. I associate special people in my life with Lake Granbury	1	2	3	4	5
d. Lake Granbury means a lot to me	1	2	3	4	5
e. I identify with Lake Granbury	1	2	3	4	5
f. I can't imagine a better place for what I like to do	1	2	3	4	5
g. I'm happiest when I get to visit Lake Granbury	1	2	3	4	5
h. I feel that a lot of other lakes could substitute for Lake Granbury	1	2	3	4	5
i. I really enjoy Lake Granbury	1	2	3	4	5
j. Lake Granbury is the best place for the recreational activities that I enjoy	1	2	3	4	5
k. I have a lot of fond memories of past experiences with family/friends at Lake Granbury	1	2	3	4	5
l. Compared to Lake Granbury, there are few satisfactory alternatives	1	2	3	4	5
m. I feel a strong sense of belonging to Lake Granbury	1	2	3	4	5
n. The time spent on Lake Granbury allows me to bond with my family/friends	1	2	3	4	5
o. Visiting Lake Granbury allows me to release built-up tension	1	2	3	4	5
p. I have a strong emotional bond to Lake Granbury	1	2	3	4	5
q. Visiting Lake Granbury says a lot about who I am	1	2	3	4	5

30. Considering your most preferred activity, indicate how you feel about each of the statements below.

(*circle one number for each statement)*	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a. I have little or no interest in [my most preferred activity]	1	2	3	4	5
b. When I participate in *[my most preferred activity]*, others see me the way I want them to see me	1	2	3	4	5
c. I find a lot of my life is organized around [my most preferred activity]	1	2	3	4	5
d. Participating in *[my most preferred activity]* allows me to express myself.	1	2	3	4	5
e. *[My most preferred activity]* is one of the most satisfying things I do	1	2	3	4	5
f. I enjoy discussing *[my most preferred activity]* with my friends	1	2	3	4	5
g. *[My most preferred activity]* is important to me	1	2	3	4	5
h. I find *[my most preferred activity]* engrossing	1	2	3	4	5
i. I identify with the images associated with *[my most preferred activity]*	1	2	3	4	5
j. *[My most preferred activity]* is one of the most enjoyable things I do	1	2	3	4	5
k. Participating in *[my most preferred activity]* provides me with opportunity to be with friends	1	2	3	4	5
l. To change my preference for *[my most preferred activity]* to another activity would require major rethinking	1	2	3	4	5
m. I invest most of my energy and resources in *[my most preferred activity]*	1	2	3	4	5
n. I try to structure my daily/weekly/monthly routine around *[my most preferred activity]*	1	2	3	4	5

o.	You can tell a lot about a person by seeing them enjoying their recreation	1	2	3	4	5
p.	Special people in my life are associated with *[my most preferred activity]*	1	2	3	4	5
q.	*[My most preferred activity]* has changed my self-image	1	2	3	4	5
r.	*[My most preferred activity]* occupies a central role in my life	1	2	3	4	5
s.	Participating in *[my most preferred activity]* says a lot about who I am	1	2	3	4	5
t.	Most of my friends are in some way connected with *[my most preferred activity]*	1	2	3	4	5
u.	When I participate in *[my most preferred activity]*, I can really be myself	1	2	3	4	5
v.	I prefer to be around others who share my interest in *[my most preferred activity]*	1	2	3	4	5
w.	When I'm doing *[my most preferred activity]*, I don't have to be concerned with the way I look and behave	1	2	3	4	5
x.	My true self emerges when I participate in *[my most preferred activity]*	1	2	3	4	5
y.	To a large extent, *[my most preferred activity]* provides one of the few outlets where I can be myself	1	2	3	4	5

SECTION D: LAKE MANAGEMENT

The following questions address your boating experience on Lake Granbury for 2010

31. Information about various impacts you may have noticed at the lake would be helpful to lake managers. To what extent did you find each of the following to be **a problem** on Lake Granbury?

(*circle one number for each statement that best reflects your opinion*)	Not a Problem	Slight Problem	Moderate Problem	Big Problem	Not Applicable
a. Litter on shoreline	1	2	3	4	5
b. Improper disposal of human waste	1	2	3	4	5
c. Loud music played from watercraft	1	2	3	4	5
d. Engine noise from boats	1	2	3	4	5
e. Poorly constructed docks	1	2	3	4	5
f. Changes in the lake's water level	1	2	3	4	5
g. Debris at launch ramps	1	2	3	4	5
h. Inadequate public toilet facilities on the lake	1	2	3	4	5
i. Erosion of the shoreline	1	2	3	4	5
j. Large wakes from boats	1	2	3	4	5
k. Inflatables/water toys trailing watercraft	1	2	3	4	5
l. Lack of public access to the lake	1	2	3	4	5
m. The speed of other boaters	1	2	3	4	5
n. Fish habitat	1	2	3	4	5
o. Polluted water in the lake	1	2	3	4	5
p. Wildlife habitat	1	2	3	4	5
q. Poorly constructed bulkheads along shoreline	1	2	3	4	5

SECTION E: SELF PERCEPTION

32. The next part of the questionnaire examines your responses to specific situations. Read each statement as if it referred to you and indicate your level of agreement or disagreement with each statement.

(*circle one number for each statement that best reflects your opinion*)	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a. I stick with my group even in difficult situations	1	2	3	4	5
b. I respect the majority's wishes in groups of which I am a member	1	2	3	4	5
c. I take responsibility for my own actions	1	2	3	4	5
d. It is important for me to act as an independent person	1	2	3	4	5
e. I maintain harmony in the groups of which I am a member	1	2	3	4	5
f. It is important to consult close friends and get their ideas before making a decision	1	2	3	4	5
g. I will sacrifice my self-interest for the benefit of my group	1	2	3	4	5
h. My personal identity is important to me	1	2	3	4	5
i. I respect decisions made by my group	1	2	3	4	5
j. I should decide my future on my own	1	2	3	4	5
k. I prefer to be self-reliant rather than depend on others	1	2	3	4	5
l. I enjoy being unique and different from others	1	2	3	4	5

SECTION F. HOUSEHOLD INFORMATION

The following information will help us better understand the characteristics of lake users and make predictions about lake use in the future. Your answers are strictly confidential.

33. What year were you born? (e.g., 1960) _____ year

34. What is your gender?

☐Male ☐Female

35. Which of the following indicates your level of education (check one)?

☐8th grade or less
☐9th to 11th grade
☐12th grade (high school graduate)
☐13-15 years (some college)
☐16 years
☐17+ years
☐Masters, Doctoral, or Professional Degree

36. Which of the following best describes your employment status?

☐Employed, full time
☐Employed, part time
☐Retired, but working full time
☐Retired, working part time
☐Retired, not working (If you are employed, what kind of work do you do?____
☐Homemaker
☐Unemployed
☐Student
☐Other (Please specify: _____)

37. Are you of Hispanic, Latino, or Spanish origin?

☐No, not of Hispanic, Latino5, or Spanish origin
Yes, Mexican, Mexican Am., Chicano
☐Yes, Puerto Rican
☐Yes, Cuban
☐Yes, other origin

38. Please tell us which of the following best indicates your race or ethnic group?

☐White
☐Black, African American, or Negro
☐American Indian or Alaska Native
☐Some other race
☐Asian Indian
☐Chinese
☐Japanese
☐Korean
☐Filipino
☐Vietnamese
☐Other Asian
☐Native Hawaiian
☐Guamanian or Chamorro
☐Samoan
☐Other Pacific Islander

39. Which of the following best describes your household income before taxes?

☐Less than $25,000	☐$75,000-$99,999	☐$200,000-$249,999
☐$25,000-$49,999	☐$100,000-$149,999	☐$250,000-$299,999
☐$50,000-$74,999	☐$150,000-$199,999	☐$300,000 or more

VITA

Name: Jee In Yoon

Address: Department of Recreation, Park and Tourism Sciences, Texas A&M University, 2261 TAMU, College Station, TX 77843-2261

Email Address: jeein.yoon@yahoo.com

Education: Ph.D., Recreation, Park and Tourism Sciences, Texas A&M University, 2012

M.A., Sport and Leisure Sciences, Ewha Womans University, 2006

B.S., Sport and Leisure Sciences, Ewha Womans University, 2004